50¢

Contents for December 1960

SPECIAL LIVESTOCK HEALTH ISSUE

18 Point Guide for Cow Culling	Milking Shorthorn Journal	1
"Planned Parenthood"	The Duroc News	3
Erysipelas: Scourge of Swine*	Litter-Ature	5
How To Guard Against Rabies	Western Livestock Journal	6
Worm Beef Cattle*	Tri-State News	8
Water Belly Becoming No. 3 Steer Killer	Successful Farming	9
How To Help The Ewe in Difficulty	Farmer and Stock-Breeder	11
Antibiotics For Poultry	Everybody's Poultry Magazine	18
Watch For Cattle Lice*	University of Wisconsin	21
Beware Livestock Poisons	National Livestock Producer	22
Five Animal Diseases You Can Catch	Wallaces Farmer	24
Will You Breed Cows By Blood Type?	Farm Journal	26
It Pays To Use Chemicals Safely	U.S.D.A. Leaflet 472	28
The Importance of Barn Ventilation	American Agriculturist	30
Chimney Smoke	Irene Rudie	32
How To Handle The "Downer"	Penn-Jersey Farming	33
Get Bigger Yields of Small Grain*	Clemson College	35
Letters To Farmer's Digest	Our Readers	36
What's The Future for Medicated Feeds?	Western Dairy Journal	39
Millions Lost on "Look-Alike" Diseases*	Louisiana State University	44
Watersheds Show Their Stuff	The Kentucky Farmer	45
Fertilizer Tested In Wheat Field Plots	The Farmer	47
Snorter Dwarfs Are Still With Us	Nebraska Farmer	51
Hog Cholera	New England Homestead	55
Fun On The Farm	Collected	57
Caring For the Sick Cow	Guernsey Breeders' Journal	61
Humus	Le Progres Agricole de France	70
Crooked Calf Disease	Agricultural Research	73
Solve Farm Problems In Six Steps	Wisconsin Agriculturist	75
Beat Mastitis Without Medication	Butter-Fat	77
Respiratory Infections Increasing*	Iowa State University	79
Tranquilizers, A Helpful Tool	The Ohio Farmer	80
A Thought A Day	Everett Smith	83
He Saves The Soil	Humble Farm Family	85
Rhinotracheitis Strikes Hardest In Winter	Prairie Farmer	89
Tranquilizing Drugs in Dairy Herds*	Chicago Farmers Bulletin	90
Catarrhal Fever Can Cause Trouble	Western Farm Life	91

*Short Features in this issue. One Year Continuing Index, **pages 93 & 94**

Give A Gift of Great Value

You can give a valuable gift at an extremely modest cost this Christmas. For yourself . . . and for many of your friends, relatives, tenants and customers, there is no more helpful gift than Farmer's Digest.

When you give Farmer's Digest, you give the best from more than 100 other farm magazines - - the best money-making information available. Take advantage of our special Christmas rates, just return the handy card enclosed. If you like, we will bill you after January 1. Attractive gift cards and the first copy can be mailed to arrive just before Christmas.

One 1-year Gift $3.00. Two 1-year Gifts, $2.50 each. Three or more 1-year Gifts, $1.95 each.

ENORMOUS CALVES: Hybrid calves from your cows by **CHAROLAIS** bulls will actually weigh 100 pounds more at weaning — 200 more as yearlings. For proof of performance on sensibly priced papered **CHAROLAIS**, write **LAMME FARMS**, Leclede 94, Missouri.

THE FARMER'S DIGEST

Route 2 FORT ATKINSON, WIS.

Editor and Publisher — Hugh Highsmith
Associate Editor — D. W. Scheid
Livestock Editor — Al Haller
Circulation Manager — Jay P. Van Valin
Subscription Service — E. M. Hartwig, V. M. Binkert
Industry Sales — Raymond C. Groendyke

Published monthly, except June-July and August-September, when published bi-monthly at Fort Atkinson, Wisconsin by The Highsmith Co. Inc.

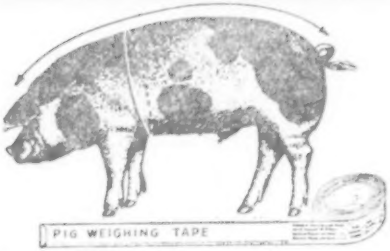
Subscriptions in U. S., U. S. Possessions and Canada: One year $3.00, two years $5.50, three years $7.75.

Subscriptions to Other Countries: One year $3.50, two years $6.50, three years $9.25.

ADVISORY EDITORIAL STAFF

William A. Albrecht, Chairman
Department of Soils, U. of Mo.
G. B. Gunlogson, Agricultural Engineer
H. J. Reed, Dean of the School of Agriculture, Purdue University
T. J. Rutherford, Chairman, Canadian Farm Credit Corporation
W. T. Spanton, Chief of United States Ag. Education Service

POSTMASTER: Send notice on POD Form 3579 to Farmer's Digest, Route 2, Fort Atkinson, Wis. Entered as second-class matter at the Post Office at Ambler, Pa., July 30, 1948, re-entered at Fort Atkinson, Wis., additional entry at Jefferson, Wis. under the act of March 3, 1879. Printed at Jefferson, Wis.



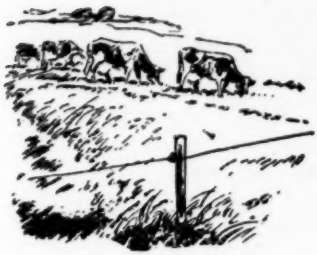
HOG WEIGHING TAPE — New Profit Tool

Use this tape to check weights frequently and make more money from hogs. Get best gains from your feeders and sell at right weight to get top prices. Uses both length and heart-girth measurements. Helps you select meat-type breeding stock. 60" heavy cloth. Money back guarantee. Each $1.59 — 3 for $4.49 — 12 for $16.95. Write: **Highsmith Co.**, Fort Atkinson, Wisconsin.

The Farmer's Digest

Volume 24 December, 1960 Number 6

18 Point Guide For Cow Culling



Quickest, easiest way to improve your herds . . .

Condensed from
Milking Shorthorn Journal

IT IS wise to cull low producers out of your dairy herd, especially in such period of economic stress as we are experiencing now. This culling questionnaire can help you make the right decisions.

Check the following statements "yes" or "no" for the cows under consideration. If the question is checked "yes" it indicates culling; "yes" answers to questions 1, 2, 3, 4, 7, 8, 9, 17, and 18 are strong indications that the cow should be culled; if several cows are being considered for culling, check off each cow and make comparisons.

1. If she is a first-calf heifer, did she produce 30 percent below your herd average?

2. In the first four months of her lactation has she produced less than 130 pounds of butterfat?

3. Is her 305 day M. E. lactation record below the average of herd mates freshening during the same year and season? (Divide the herd into two seasons of freshening—March through August—September through February.)

4. Will she be dry six months or more?

5. Is there a replacement heifer available?

6. Is she an old cow?

7. Does she have a record of mastitis?

Reprinted by permission from
Milking Shorthorn Journal, 313 South Glenstone Avenue, Springfield, Missouri

8. Is she positive to Bang's disease test?

9. Does she have a record of breeding troubles?

10. Did she have complications after last calving?

11. Does she have a record of milk fever or ketosis?

12. Is space needed for fresh heifers?

13. Is the price of beef average to good?

14. Is she a spring freshener?

15. Is she below the average type of your herd?

16. Is she a slow milker?

17. Will it pay you to replace this cow with a higher producer?

18. Will it pay you to remove this cow without replacing her?

Aureomycin For Dairy Cattle

Dairy cows fed aureomycin in a Michigan State University experiment averaged a little less than one pound per day more milk than similar cows not getting the antibiotic in their feed.

C. A. Lassiter, head of the Michigan State University dairy department, reported the results of this research recently.

Experimenters used 18 cooperator herds under field conditions for the 51-week study. One of the trial feeding periods was from April to September (22 weeks) and the second was from October to May (29 weeks). Cows in each herd were paired at the start of each trial into a group treated with aureomycin in their feed and a control group not being fed the antibiotic.

Aureomycin was fed in the form of crumbles twice a day on top of the grain ration to the experimental groups of cows, Lassiter reported.

In both trials, the aureomycin-fed cows produced more milk than those not fed the antibiotic. Average increases were .21 of a pound of milk a day in trial 1, and 1.81 pounds a day in trial 2. Combining the results of both trials gave a weighted average of .82 of a pound a day increase in milk production in the treated cows.

Researchers got a favorable response to aureomycin feeding in 14 out of 18 herds in trial 1 and in 11 out of 14 herds in trial 2.

One problem encountered in the experiment was bloat which occurred mainly during the first three or four weeks after going on feed. Bloat was found entirely in the medium and high producing herds and usually did not last long. About 8 per cent of the cows fed the aureouycin had some trouble with bloat. —*Michigan State University*

"Planned Parenthood"

Illinois animal scientists are working on controlled breeding. This may be a boon to livestock producers . . .

Condensed from The Duroc News

IF University of Illinois animal scientists have continued success with a current experiment, "planned parenthood" may reach into many barnyards of America.

These men are developing methods whereby they can slyly control the breeding dates and consequently the birth dates of farm animals. "The results of controlled breeding offer farmers a multitude of advantages," says Philip Dziuk, animal physiologist who's spearheading the work.

He cites these examples:

1. Farmers could plan livestock births for a restricted period of time. This would eliminate random births over a long period. For example, at least 21 days are necessary for 30 bred gilts to farrow. By controlling the breeding date, however, farmers can plan on farrowing 30 gilts over a five-day period.

2. Groups of offspring would have a more uniform size—making them easier to handle, feed and sell. "Imagine the advantages a farmer would have if he could guarantee a certain number of market animals of the same age on the same date!" exclaims Dziuk.

3. Farmers could plan their breeding programs so that offspring would be ready for market when seasonal prices are highest.

Dziuk reports that poultry producers can already regulate chick hatchings to utilize these advantages. But a successful and practical method for larger animals is still in the experimental stage.

To control breeding among several females, the farmer must first synchronize their heat periods. Then the animals breed, ovulate and produce young at the same time.

In order to synchronize heat periods, Dziuk and his co-workers are testing a hormone and artificial light.

So far the hormone treatment shows the most promise. Dziuk is using one of several progestins. These are female sex hormones secreted during pregnancy and when the animal is not in heat.

Reprinted by permission from The Duroc News, 237-9 North Monroe, Peoria, Illinois

One might logically ask, "How does it synchronize heat if it keeps animals out of heat?"

Dziuk merely injects all females in a group every day for a week or so. This keeps the females out of heat. Then he stops the hormone injections. About four days later, most treated animals come into heat and ovulate.

The work of injecting animals daily, however, makes this method too costly and cumbersome for the average farmer. Besides, the animals begin to feel like pin cushions.

So Dziuk tried another method —mixing the hormone with the animals' feed. Animals to be bred receive treated feed for so many days. Then they return to a normal diet. Within a few days they come into heat, mate and ovulate.

Dairy cows react to discomfort by giving less milk. Shelter against weather extremes and good ventilation will help prevent production drops.

Results so far have caused smiles of encouragement even though mice are serving as "guinea pigs" for much of the preliminary work. About 70 percent of the mice tested have mated and conceived on the expected days. And their litters have been normal, indicating that the treatment did not interfere with normal reproduction.

Several trials with 100 hogs have also triggered smiles. But results have not been as consistent

Several trials with 100 hogs cent of the treated gilts came into heat and mated on the third, fourth or fifth day after treatment stopped. Some 20 percent came into heat later, and the other 20 percent suffered from side-effects.

Gilts allowed to farrow produced litters of normal size. In one group of 10 gilts, seven farrowed in a 48-hour period on a Monday and Tuesday. This serves as a reminder that midweek farrowings will be an extra bonus if the treatment can be perfected.

Howard Brinkley, a graduate student in animal science, has tested the "artificial light" method of regulating breeding. Poultrymen already use light to control chick hatchings and egg laying. Using mice, Brinkley designed his study around the theory that mice mate and ovulate in darkness only.

He therefore used artificial lighting to regulate daylight and darkness to control their breeding. The results showed some promise. But hormones seem to have more immediate future for controlling large-animal breeding.

Dziuk feels that the hormone treatment has already reached a certain stage of success. When the

wrinkles are ironed out, planned parenthood in the barnyard will be a tremendous boon to the nation's livestock producers.

Erysipelas: Scourge of Swine

IT IS QUITE POSSIBLE for you to come out to the barn one of these fine days and find some of your hogs really sick. A quick check will show a temperature of from 104 to 108 degrees.

It is obvious that they are having trouble breathing. A few are vomiting. A few more are dead. Call the vet! Most likely he'll say:

"Acute erysipelas."

The germ not only lives in the soil, but can actually grow there. Your hogs can get one of three stages, acute, subacute, and chronic. Death losses can run from none to 75 per cent.

But swine erysipelas is known more for its crippling effect than for the deaths it causes. The hogs can't get around easily, they show little interest in food for a time and become unthrifty.

This plus the permanent damage to the joints and even the heart, leaves the animal in such a condition that it never does very well. It remains rough, undersized, or backward in growth — a poor product to merchandize.

Those that do reach the market are docked at the packinghouse. Thousands of dollars are lost annually because the diseased tissue requires extra trimming and the visibly affected joints are removed and lost.

Here's how your pigs will look if they get a subacute or chronic case of erysipelas:

They'll probably have hot swollen joints and an arching of the back. They may never completely recover because the joints become infected and chronic, like arthritis.

You may not even notice that the hog is sick until you discover the infection of the joints . . . most frequently at the knee, hock, and toes. Besides the noticeable lameness, shifting of weight, and other signs of pain in the legs, there is a gradual enlargement of the affected joint. It will feel hot to the touch.

Sometimes the symptoms disappear. Many show up again or get progressively worse and the arthritis leads to bony enlargements and thickening of the soft parts resulting in a permanent deformity of the joint.

There is only one way to prevent erysipelas. Don't wait, Vaccinate!

—Litter-Ature

Rabies

Be careful with this costly disease . . .

Condensed from Western Livestock Journal

ONE of the most costly lessons a stockman can learn is to never lower his guard against diseases. This is especially true with the age-old diseases affecting livestock for centuries past since, with the attention invariably turned to newer diseases, the old ones flare up with deadly timing and cause the stockman considerable loss.

One such old-timer is rabies, a disease which last year flared up with startling viciousness and costliness in several states. According to USDA, rabies still costs about $10 million annually in this country.

Once regarded primarily as a problem among dogs and wild animals, rabies has increased markedly among farm livestock. In one recent 4-year period, this fatal virus disease of all animals and man increased one-third among cattle, 300% among sheep and 400% among swine.

Prevention. With this situation posing an increasing threat on so many ranches, what can the average stockman do about it?

First of all, be familiar with the warning signs of the disease as they appear in various species of stock. And get prompt help when these signs appear.

Rabies can take one of several forms in cattle. They sometimes show little or no evidence of excitement but more frequently become restless and aggressive. Other symptoms are anxious expression, trembling of the ears, excessive salivation as shown by continuous drooling of saliva from the lower jaw, gradual paralysis, loud bellowing, attacks upon moving objects and tenesmus (straining to eliminate bowel or bladder wastes without success). In cattle, falling is also common. If an attempt is made to rope the animal, it may fall when hit by the rope even if it is not caught. A sudden noise or sudden excitement may produce the same results.

Ovine Symptoms. Sheep usually show the same kind of symptoms as cattle except that they may not be as restless. They may also stamp their feet and gnaw or lick at wounds.

Reprinted by permission from
Western Livestock Journal, 4511 Produce Plaza, Los Angeles 58, California

Hogs developing rabies often show intense excitement followed by weakness and paralysis. Rabid hogs will attack other animals when excited, even attacking their own pigs.

What is to be done if a farmer or rancher suspects that one of his animals is developing rabies? The first thing to do is call a veterinarian to make sure whether the problem is rabies or some other disease. Rabies is transmitted by the bite of another rabid animal. That is why many authorities recommend that a veterinarian check the situation when any unusual bite wounds appear in livestock. If vaccination is done soon enough after the animal has been bitten, it is possible to prevent rabies from developing. The time factor is important, however, for if there is too long a delay there will be no hope of saving the animal. Fully-developed rabies is always fatal.

Six milligrams of stilbestrol implanted in the ears of 3½-month-old calves increased their weight gains 8½% up to weaning time, reports Dr. S. A. Ewing, animal husbandman at Iowa State University.

Be Careful. If animals display unusual symptoms of aggressiveness or the other signs mentioned, the stockman himself should exercise care in dealing with them. If they bite him, he can contract rabies.

Families, particularly children, should be warned that any wild animal which appears "tame" may be rabid. Animals having this disease often reverse their behavior. In such cases, foxes have actually tried to enter houses and squirrels have been caught easily by children.

The disease is caused by a virus which is transmitted in the saliva of a rabid animal. This virus can be present for sevaral days before visible symptoms of the disease actually appear.

Rabies has grown as a threat to domestic livestock largely because it has become so firmly entrenched in the wild animal populations of so many areas. These act as a reservoir from which the disease is spread to livestock continually. Foxes and skunks are the chief reservoirs but the American Foundation for Animal Health says the disease is harbored also by wolves, coyotes, deer, antelope, squirrels, rats, weasels, gophers, raccoon and by such birds as owls, hawks, pigeons and bats.

Fox Carriers. The rabid fox is responsible for most of the cases of rabies in cattle. In 1953 there were 1,033 laboratory confirmed cases of rabies in fox and 1,931 cases in cattle. In some areas,

alarmingly heavy infections of rabies still occur.

Solution of the rabies problem in the United States depends upon the control of the disease on a national basis. The Public Health Service and Fish and Wildlife Service are empowered by law to engage in a rabies control program. And in event the disease becomes a threat to livestock, the Dept. of Agriculture has the authority to participate in a control program. Authorities pin best hopes for cleaning up rabies on two measures: (1) Systematic vaccination of dogs against the disease and elimination of stray dogs. (2) Eradication of those species of wild animals which are carriers of rabies in any area, especially foxes and skunks.

Vaccination to control an immediate outbreak in a cattle herd is useless. And many veterinarians report that the use of different methods of vaccination in cattle known to have been bitten almost always prove to be futile. Most cattle are bitten around the nose, lips or face, which makes for rapid and fatal infection. Incubation usually takes about 15 days and, as any vaccination takes 21 or more days to produce immunity, the futility of protecting exposed animals by vaccination is readily apparent. Antirabic vaccination has been demonstrated to reduce losses in areas where rabies is common. When a dose of vaccine sufficiently large to ensure good immunity is used, the cost of vaccination is much higher than the cost of livestock insurance.

There's only about a cupful of milk in the cisterns of a cow's udder at milking time, the rest is in tiny pockets waiting to be secreted. Treat bossy right and her "let down" hormone says OK and down comes the milk. Treat her rough and the milk stays where it is.

—Tri-State News

Worm Beef Cattle

Beef cattle should be wormed in the fall, and preferably twice a year by including a spring worming, says Dr. Fred Lewis, Maryland veterinarian. Internal parasites are most troublesome to cattle of yearling age, he says. By the time the calf begins to show symptoms of parasites, there is great danger of losing it. If it recovers, the animal will probably never do as well as it should.

Water Belly Becoming No. 3 Steer Killer

An owner has 3 choices if an animal becomes affected . . .

Condensed from Successful Farming

J. W. Bailey, D.V.M.

WATER belly or urinary calculi, a blocking of the urinary tract with "gravel" or "stones" so that urine cannot be passed in a normal manner, is generally recognized today as the No. 3 steer killer.

These obstructions are generally found in the urethra which conducts urine from the bladder down through the penis. They may accumulate in the kidneys, ureters, bladder, or urethra.

The calculi often lodge in the S-shaped fold of the penis high between the hind legs, probably because the urethra is constricted by the doubling-back of the penis here.

Several possible causes of urinary calculi are recognized, including such things as alkali or hard water, a deficiency of vitamin A, urinary infection, and an improper balance of calcium and phosphorus in the ration. However, a low intake of drinking water is probably the commonest cause, either alone or in combination with some of the others above.

Here are certain management practices which take into consideration these causes and should prove helpful in preventing water belly in steers:

Vitamin A can be supplied by including g o o d, green-colored roughage in the ration, together with such feeds as yellow corn, yellow gluten, green peas, and vitamin A supplements. Urinary infection can usually be identified by the passing of bloody urine, and such cases can be treated early by injections of penicillin.

Animals can be encouraged to drink more water by furnishing them a constant supply of clean water in the summer time, and warming the water during the winter months. Providing salt free-choice also encourages animals to drink more.

Experiments have shown that water belly in range steers can be prevented to a significant extent by the feeding of protein concentrate meal or pellets containing

Reprinted by permission from Successful Farming, Des Moines 3, Iowa

from 10 to 20% salt. As an alternative method, an extra 3 to 5% more salt can be added to the regular grain ration. The extra salt induces greater consumption of water and causes dilution of urine so that fewer and smaller "stones" are formed.

Since calves are often-times affected at weaning when they are reluctant to drink water, owners are advised to add extra salt to their ration shortly before the calves are taken away from their dams. This practice helps to get them in the habit of drinking water even before they are weaned.

Then there is a chance that delayed castration may help a great deal in preventing water belly of steers. At any rate, in 3,000 head of range steers observed by the Montana Experiment Station, there was an incidence of urinary calculi in only 0.7% of late-castrated calves as contrasted with 4.7% in early castrates.

If an animal becomes affected with water belly, an owner has 3 choices:

1. When caught in the early stages, and only a single animal is involved, it may be best to butcher it immediately before the meat is ruined by absorption of urine.

2. When valuable bulls or thin steers are affected, a veterinarian can be called to perform surgery for removal of the calculi, clearing the urinary tract. If the bladder has already ruptured, it may be necessary to drain urine from the abdominal cavity.

3. When less advanced cases or several animals are involved, a veterinarian may be called to inject animals with an extract of pancreas. This product is intended to relax the muscles of the urethra so calculi can be passed. In one Canadian feedlot, 60 steers were showing symptoms and all animals recovered in about a week after 3 injections of the extract.

Cattle Disease Causes Huge Losses

Cattlemen should keep a sharp watch for signs of a serious disease that's causing huge losses in both dairy and beef cattle.

The disease, says the American Foundation for Animal Health, is infectious rhinotracheitis. It now covers two-thirds of the nation and is spreading constantly.

Symptoms are sudden halt of milk flow; in beef cattle, drooling, nasal discharge, a deep cough or loss of appetite.

The disease can be prevented by vaccination, and it can be treated successfully. —*North Carolina State College*

How To Help The Ewe In Difficulty

A British shepherd's guide to lambing . . .

Condensed from
Farmer and Stock Breeder

G. A. Malcolm,
Flockmaster and Royal Show Judge

EVERY lambing has its difficult cases and every case has its lessons.

Shepherds all know the symptoms of lambing—ewe running around bleating, lying down, pressing, the arrival of the water bag, and then the lamb—it comes usually forefeet and head first. Shepherds will agree that it is safest to leave lambing as long as possible to Nature. Damage is more often due to the work of the shepherd than to the labors of the ewe.

Only in the case of a lamb being hanged (dangling from the ewe with a badly swollen head) is there need to hurry to save its life.

All that is required as a rule is a little help at the finish to take away the lamb, then to clear the lamb's nostrils and mouth to ensure that there is nothing to obstruct breathing.

Before giving up a lamb as dead hold it up by the hind legs and give it a jerk, slap its buttocks, blow into its mouth and ears, rub the body with straw, throw cold water over the ribs, squeeze and relax the ribs as in giving artificial respiration, work the forelegs as in a running motion.

Put a finger down the lamb's throat, as far as possible, then withdraw it fairly quickly while rubbing it along the roof of the mouth. The latter treatment appears to have a stimulating effect in making the lamb take its first gulp of air.

If an ewe has been on lambing for two or three hours with no results she should be examined to see if the lamb is coming right. A finger inserted into the ewe should feel forefeet and nose if the front end is coming, or hind feet and tail if the rear end is coming. Any other condition must be regarded as abnormal.

Shepherds should know all the parts of a lamb with their eyes shut. By the touch of their hands they should know the muzzle,

Reprinted by permission from
Farmer and Stock Breeder, Dorset House, Stamford Street, London, S. E. 1, England

eyes, ears and crown of the head, and they should be able to distinguish forelegs (with their knees and elbow joints and toes pointing up) from hind legs (with their hocks and stifle joints and toes pointing down).

To gain experience, novices should put a dead lamb into a small bag and practise on it. Though what is readily done with a lamb in a bag is not so easy in a "tight" ewe, it helps novices to understand what ought to be done.

It teaches them how, by simply pushing the body back, misplaced parts may come right of themselves; how easily a head can be corrected if the muzzle can be grasped in the cup of the hand; or how a leg can be corrected if caught at the foot. Novices should also practice, and get into the habit of, making their hand as small as possible by keeping the fingers and thumb tightly together.

Poultry scientists remind broiler raisers to insist on careful handling of the birds when they are loaded out of the house. Bruising accounts for a high percentage of down grading of broilers under the new mandatory poultry inspection law.

And when working inside an ewe they should realize that, by keeping their fingers always in touch with the lamb they are not likely to tear other parts.

They should be able to recognize the three membranes in which the lamb is enclosed:—

(1) The "water bag" which is the first to appear;

(2) the thin, almost transparent, membrane next to the lamb itself (this may have to be broken through in order to rectify parts); and

(3) the "cleaning", the membrane next to the ewe which does not come away until some time after the lamb is born.

Lambers should make certain that their hands are clean and fingernails trimmed. A pail of warm water containing disinfectant should be used, and a good brand of non-irritable toilet soap or lambing oil for lubricating the hands. A clean rag or some old newspapers are useful as towels. There should be a dose of penicillin and a pessary for every ewe in which a hand is entered.

In tackling very tight or very dry cases—when lambs are already dead—lard and soapy suds should be used freely.

For securing legs, two pieces of strong window blind cord looped at one end should be at hand, and for securing the head I suggest about 4 ft. of plastic-covered wire

as used for curtain rods, with wooden grips for pulling, fixed at the ends. Perhaps also a sharp knife should be carried, but only for use as a last resort. It is better to leave any cutting-up of lambs to your veterinary surgeon.

Occasionally the lamb is rather big and, to save the ewe a very prolonged lambing, help may be given by gentle strains on the legs and, perhaps, the head. Stop occasionally and push the lamb back. It is very important to work the fingers over the crown of the head to lever it forward, while clearing back any internal skins or membranes. This rarely results in any serious tearing of the ewe or in any legs being torn from the lamb.

Every ewe should raise a lamb. Animal scientists say orphan lambs or one of twins should be transferred to a ewe which doesn't have a lamb. To get a ewe to adopt a strange lamb, place her in a stanchion in the corner of a lambing pen. She can be kept there until she adopts the lamb.

In complicated and exceptionally tight cases holding up an ewe by the hind legs is very helpful. This practice reduces the pressure of the ewe acting against the hand of the lamber and causes the lamb to stay down. Moreover, it gives the lamber more room to work inside the ewe and allows him to work in almost a complete circle, which is helpful when a lamb is lying badly twisted or is coming sideways or upside down.

Types of Trouble

Lambing troubles are of two main types: those occurring when the lamb has advanced into the outer passage and becomes jammed, and those where the lamb is lying so far back that it has never properly entered the passage. Both types can present difficulties, and while the big strong hands and fingers may tackle the former, only small hands can deal with the later.

In dealing with front-end presentations three points should be remembered:

Head alone lambings are possible in big roomy ewes, but they are dangerous with tight ewes. In trying to take away such a lamb there is a danger of breaking its neck or pulling off its head. It may be safer to grasp the lamb by the scruff of the neck.

Head with one foreleg lambings are quite common and can generally be successfully dealt with in roomy ewes if taken patiently. Pull on head and leg simultaneously to avoid breaking the one or other away.

Head and two forelegs lambings are naturally the safest for

both ewe and lamb, as in this position a lamb is at its slimmest. Hence every effort should be made to have the lamb in this position.

The usual procedure is first to secure one foreleg and then the other; and if one or both of them have to be pushed back to secure the head, cords may be attached at the ankles to prevent them curling too far back. The head is then corrected, the retarded leg or legs brought forward, and lambing proceeded with.

Rear End First

Rear-end lambings are generally easy. First secure one hind leg and then the other and, after making sure that the tail is coming between the legs, carry on the lambing. Once the hind legs are out the rest of the lamb should be removed quickly to prevent suffocation.

Vaccinate pigs against cholera when they are six to 12 weeks old.

This is one of the few occasions when haste is desirable in a lambing field.

Misplaced heads commonly happen before the lamb enters the passage. This entails inside work for a small hand. One or both forelegs may be seen or felt, but no head. If the lambing is not far advanced the head must be bunched up at the neck. A hand grasping the crown and face (avoid touching the eyes or jaws lest they be injured) may suffice to guide the head into the passage along with a little pressure applied outside on the ewe's stomach.

As a rule this operation is not easy and it is necessary to secure and guide the head by use of a cord. For this purpose shepherds generally carry pieces of cord, string or boot laces. On no account should binder twine be used; and metal instruments such as hooks or forceps are dangerous. The noose has to be held by the points of the fingers and then taken inside the ewe and placed over the head. The task is not easy.

I suggest to shepherds that they use plastic-covered wire for looping heads. It is easy to work with and does little or no harm inside the ewe. If it becomes overstretched it is cheap to replace.

The lamber should first insert his hand and grasp the head in the palm with his fingers over the crown. The wire cord is just doubled (not made with a noose at all), and the bent end is then slid in along the underside of the arm into the ewe and up to the hand. It is then pressed by the fingers over the lamb's crown and round and over both ears (if only

over one it will just slip off when pulled) and brought round under the throat.

It may be possible to give the cords several twists round each other at the throat before extracting the hand.

Alternatively, an assistant may start twisting the two ends together from the outside, twining them round and round until the throat is reached. Care should be taken not to include other parts in the coil. With the head corded and brought into proper lambing position, the battle is half won as the body tends to follow the head correctly. All that remains to be done is to bring the forelegs into position.

Misplaced legs commonly happen before the lamb enters the passage, but occasionally occur when it is in the passage. Whether or not they are easily rectified depends very much on the tightness of the ewe and, of course, on the size of the lamb.

Calf feeding utensils should be thoroughly and carefully cleaned daily. Many cases of calf scours originate from improperly cleaned feeding equipment.

Correction of bent ankles is seldom difficult. Correction of bent knees can generally be done using fingers to hook the leg forward while the body is being pushed back (perhaps by pressing back on the head or other leg).

Correction of a leg bent straight back from the elbow and lying along the side of the lamb is not difficult if the hand can reach the foot; otherwise, it may help if plastic-coated wire is threaded through between the leg and the lamb's body in such a way that pulling will bend the knee and bring the leg forward—again some back pressure on the lamb's body is a help.

Plastic Curtain Wire

Once a leg has been brought forward it may be necessary to keep it under control by fixing a cord round the fetlock joint. Where it is possible to draw the leg outside by hand this is easily done, but it may be difficult if the leg is far in. Instead of using a looped string by itself, I suggest curtain wire with an eye on the end. The string is threaded through the eye until it reaches the noose.

The hand is inserted by itself into the ewe to catch the foot. Then the threaded cord is slid in along the underside of the arm until the noose reaches the fingers. The noose is pushed over the foot and ankle joint. The plastic wire is held there until the noose has been drawn tight, when it is

withdrawn, leaving the leg snared by the string.

In cases where the hand cannot reach the foot and the ewe is very tight, it may be impossible to correct the leg without doing damage to the ewe. Really bad cases may call for expert veterinary assistance.

Difficult lambings are frequently caused by twin lambs coming together. The trouble is generally the result of the first lamb not having entered the passage properly, and when this is corrected, there is no more bother.

The first task of the lamber, however, is to identify the various parts so as to know which forelegs belong to the respective heads, or which hind legs happen to be mates.

Animal scientists recommend lambs should be docked and castrated within 10 days of birth.

Then he has to decide which lamb should be taken away first. Where a pair of hind legs are presented it may be easier to take them, as there will be no head to bother about. Generally, though not always, the lamb nearest the passage is the one to take first. The other lamb may have to be pushed and kept back.

Triplets and quads seldom cause any more trouble than twins, once the first lamb is delivered. If the lambing is delayed the last born may be dead, but shepherds are not always expecting triplets or quads and they are apt to be left or missed unless search is made deep down into the ewe, a job requiring care.

All Feet Together

Not to be confused with twins are odd cases where hind feet and forefeet of the same lamb enter the passage together. Search will have to be made to identify the parts and then decide which to bring forward and which to keep back. I favour taking hind legs first and having the ewe held up by the hind legs but much depends on how the lamb is lying.

It may be asked what a shepherd should do when no head or legs are entering the passage, but when nevertheless the lamb can be felt. Search will have to be made for head and legs. If the neck can be found the position of the head can be determined. On the other hand finding the rump and tail means getting the hind legs.

When ewes do not open up properly lambing is generally such a difficult operation that it is desirable to have veterinary assistance. The death rate in these ewes is so high, even when carefully lambed, as to suggest that

the condition is associated with toxaemia.

These ewes come to the lambing in the usual manner and lie down but with no results. Inspection by hand finds an opening to the lamb like the interior of a corrugated ring, so small as to allow the entrance of only one finger.

Lesser Evil

Whether the ewe would withstand a Caesarian operation better than an orthodox lambing has to be considered. But if no veterinary help is available lard or some other similar lubricant may be inserted in through the ring and the ewe left for a time.

On returning to the ewe, the ring will probably be found to have softened and by gentle massage with a circular and outwards pulling motion, eventually one, two, three, four fingers, the thumb and then the hand may gradually be inserted through to the lamb. Lambing can then proceed using an abundance of lubricants.

In my experience all the worst lambing cases have been through over-fat ewes having over-sized single lambs. In this connection I often wonder about feeding ewes much before lambing. Perhaps two or three weeks' feeding is good but if the ewe has missed service it may be nearer six weeks. The ideal diet would be one to keep up the strength of the ewe and unborn lamb, without making the ewe too fat or the lamb too big.

Lambing Rates Upped in Experiments

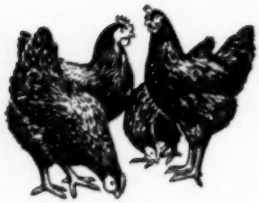
Serum from pregnant mares was found to increase lambing rates in experiments conducted by the Virginia Polytechnic Institute.

But the use of this hormone is not practical at this time, says Dr. J. W. Gossett, who was in charge of the research project. This is because the hormone has to be administered to each ewe at the correct time, and would take more individual attention than is practical for the farmer.

However, other research stations are seeking to find a way to synchronize heat periods in a flock. If successful, then the VPI work may yet find practical application.

Number of twin lambs was not increased, but the incidence of triplets and quadruplets was greater than normal. At the high level of 1,000 international units of the serum, a lambing rate of 1.84 lambs per ewe was obtained. The control group had a rate of 1.67 lambs per ewe. —*Virginia Polytechnic Institute Extension Service*

Antibiotics For Poultry



How? When? Which? . . .

Condensed from
Everybody's Poultry Magazine

L. M. Skamser, M.S., D.V.M.

THE contributions to improve animal and poultry production by antibiotics have been and continue to be applied by more and more of the nations farmers. It is estimated that for every dollar poultrymen invest in antibiotics they receive at least two dollars gross return.

The list of antibiotics used by poultrymen is impressive. It would include penicillin and streptomycin, plus the following, listed by trade name, generic name, and manufacturer:

Aureomycin (R), Chlortetracycline, American Cyanamid Co.

Baciferm (R), Bacitracin, Commercial Solvents Co.

Gallimycin (R), Erythromycin, Eli Lilly.

Mycostatin-20 (R), Nystatin, E. R. Squibb & Son.

Terramycin (R), Oxtetracycline, Chas. Pfizer & Co.

Each antibiotic is backed by considerable scientific experimentation on the part of the manufacturer, University experiment stations and feed manufacturers. The total investment for research made by these groups in each antibiotic is between one and two million dollars.

The exact mechanism by which antibiotics exert their influence over the life of bacteria and other microorganisms, has escaped detection by scientists. The practical result of their activity on farm animals can be explained and measured.

The bacterial bombardment of poultry is constant and heavy. This is due to the inability of confined poultry to escape the contaminated surroundings which prevail in practical poultry raising. This load of bacteria results in a measureable depression of growth in growing birds and production in adults. Multiplication and spread of this type of bacterial infection can be controlled by small amounts of antibiotic mixed with poultry feeds. By preventing the depressing effects of bacteria the growing chicken can

Reprinted by permission from Everybody's Poultry Magazine, Hanover, Pennsylvania

TABLE I: Spectrum of Act'vity of Antibiotics

Antibiotic	Type of Microorganism				
	Large Virus	Gram Positive Bacteria	Gram Negative Bacteria	PPLO	Fungi
Aureomycin	Yes	Yes	Yes	Yes	No
Bacitracin	No	Yes	No	No	No
Gallimycin	No	Yes	No	Yes	No
Mycostatin-20	No	No	No	No	Yes
Penicillin	No	Yes	No	No	No
Streptomycin	No	Yes	Yes	Yes	No
Terramycin	Yes	Yes	Yes	Yes	No

gain normally and the adult bird can utilize its feed more efficiently. These low levels of antibiotic in feed are called growth promoting levels, but they will not prevent or control the bacteria which are responsible for disease. Disease producing organisms have special properties which render them less susceptible to antibiotic activity therefore much higher doses of antibiotic are needed to control them.

This has led to the high level use of the growth promoting antibiotics in feed and water to prevent and control disease whereas all the available antibiotics are effective as growth promoters, considerable differences show up when treatment of disease is attempted. This difference is due to what scientists refer to as the "spectrum of activity" of antibiotics.

By looking at Table I you see that two antibiotics are effective against a wide range of microorganisms.

The others have a much narrower range of activity. In an effort to extend the range of activity in feed and water, many antibiotic mixtures such as penicillin and streptomycin are offered to poultrymen under many trade names. Without delving into a lot of scientific data, it appears that the broad spectrum antibiotics Aureomycin and Terramycin are the most practical to employ for the prevention and treatment of poultry diseases.

After 10 years of experience with antibiotic application to poultry flocks, some very practical and economic usages can be advised. When starting poultry a high level of the antibiotic in the range of 100 to 200 grams per ton or 400 milligrams per gallon of water get birds off to a good start and protects them against disease. After three weeks, a low level of antibiotic for growth promotion is used. When disease appears a 200-gram level of feed or 400 milligram level in water for five days can be used. In layers the continuous use of 25 grams of antibiotic per ton will improve feed efficiency. Breeding flocks

will benefit from a continuous level of 50 grams per ton, since this level will increase the hatchability of eggs as well as improve feed efficiency.

By referring to Table 1 you will see that one of the antibiotics. Mycostatin-20, has a range of efficacy which is confined to fungi. Fungi and molds as well as bacteria are normally found in feed grains. Occasionally a disease-producing fungi may infect adult chicken or growing turkey flocks. While this infection will not usually produce mortality, it does lessen feed efficiency and may require treatment. In the past intestinal astringents, such as copper sulfate, were used to treat these infections. Mycostatin-20 is a specific for fungi and should effect a more rapid recovery.

Good dairy management requires that cows freshen once a year. This allows for a 60-day dry period. Cows should not be bred until at least 60 days after calving.

Recently a new development which applies only to the broad spectrum antibiotics such as Aureomycin and Terramycin was discovered. This principle is known as potentiation. Its practical result is to double the activity of these antibiotics against disease without increasing the level of antibiotic in feed. In order to achieve potentiation the feed manufacturer makes adjustments in the calcium contents of poultry feeds so more of the antibiotic can be absorbed from the gut. Disease conditions which formerly were not effectively controlled by antibiotics can now be treated successfully and economically.

200 Gram Level Urged

Potentiated feeds containing 200 grams of Aureomycin should be fed to all starting chickens for the first three weeks of life. This program reduces the spread of chronic respiratory disease and protects the chick against the stress of transportation, temperature variation, disease and vaccination.

The same principle can also be applied to laying hens. The method differs because the hens' requirements for calcium and phosphorus are considerably higher than that of a growing bird. A special feed is prepared that contains one gram of Aureomycin per pound. This feed is placed on top of the regular feed once daily to treat disease. Light breed hens receive 2.5 pounds daily and heavy breeds receive 3.0 pounds daily until symptoms of disease have disappeared.

The prevention of disease in growing poultry is accomplished best by high level antibiotic treat-

ment the first three weeks. In adults, continuous treatment seems to be the most effective way to prevent disease. When disease appears, immediate action is necessary if results are to be achieved. Treatment with water solution antibiotics in emergencies is advised since they are readily available. Where practical, the treatment can be gradually switched to a feed which incorporates the proper level of antibiotic.

Watch For Cattle Lice

From late November to March is the time to watch for lice on your dairy cattle, says Allan Bringe, University of Wisconsin dairy husbandman.

Check on the shoulders, neck, top line, inside flanks and base of tail.

Bringe suggests dusting infected animals with 1.5 per cent rotenone. Repeat in about two weeks. Sometimes a third treatment is necessary. Use a shaker-type can or plunger duster to apply the insecticide. Rub dust on the animal with your fingers.

Clip animals several time during winter. Bringe says rotenone is not effective in killing mange mites. Spot treatments with lindane are effective. But get the advice of a veterinarian.

Grubs may also attack dairy cattle in winter. The systemic insecticides now on the market cannot be used on dairy cattle. But rotenone used in late winter will break up the life cycle of the grubs.

—University of Wisconsin

Dairy Cow Rental Service!

Latest idea in dairy farming: Rent your cows for somebody else to milk!

O. W. Nierman, of Centralia, Illinois, has done this for the past 34 years and he's doing all right. Any dairy farmer who has adequate housing, pasture, and milking facilities can rent cows from Nierman. If the animals have calves, they belong to Nierman. He culls them, keeping the best heifers and selling the rest.

The business has been so successful that he now has three farms to handle his livestock and a waiting list of farmers who want to rent the cows.

—Kentucky Farmer

Beware Livestock Poisons

Be careful — you may poison your own livestock!

Condensed from National Livestock Producer

John B. Herrick, D.V.M.

MANY substances other than weeds will poison your livestock. Make sure the following substances are kept away from your animals.

LEAD: Discarded paint pails, newly painted buildings, storage batteries and other articles containing lead will kill livestock. Diarrhea, trembling, convulsions and labored breathing are the common symptoms. For treatment, use detoxifying agents and purges to clean out the intestinal tract well.

STRYCHNINE: This poisoning is often a malicious attempt to kill an animal, usually a dog. Severe spasms are the common symptoms. Treatment must be immediate with an anesthetic to give complete relaxation.

ARSENIC: Rodent poisons and tree sprays containing arsenic are the usual products containing this drug. Emptying the stomach is the most effective treatment.

SALT BRINE: Salt left where it may become brine is always dangerous to swine. (Salt is needed by swine but should be fed in a feeder protected from rains and snow), although pure salt is not as toxic to hogs as once supposed. More than a 5% level of salt in poultry feed is also poisonous.

CHLORINATED INSECTICIDE: D.D.T. Benzene hexachloride, Lindane and Chlordane, when ingested by animals or when used excessively as dips or sprays, may result in overstimulation or listlessness. Avoid getting these insecticides on feed and water cups.

WEED KILLERS: Arsenicals are usually the most dangerous. Animals do not eat plants treated with arsenicals but may drink from puddles containing arsenic in recently treated fields. On the other hand, cattle like plants treated with Sodium Chlorate and they may die very suddenly

Reprinted by permission from
National Livestock Producer, 139 North Clark Street, Chicago 2, Illinois

from eating them. Sodium trichloracetate (TCA) is also widely used as a weed killer and is capable of causing severe irritation to all tissues. The weed killers 2,4-D; 2,4,5-T and MCP are not toxic to animals in treated plants which cause hazards to animals.

WARFARIN: This commonly-used rat poison will, in excessive amounts, kill livestock by destroying their blood clotting properties.

FERTILIZERS: Those containing nitrogen are poisonous to animals. Dispose of broken and empty sacks.

Nitrate poisoning has been observed where animals have come in contact with forage heavily fertilized with nitrate-containing products. Abortions and deaths have been traced to nitrate poisoning.

CLAY PIGEONS: Swine and other animals have been poisoned in areas where trapshooters have used clay pigeons for targets. The poisoning is due to the "pitch" in the target pigeons and poisoning sometimes occurs many years after the plot has been used.

Poisons differ in mode of action, therefore specific treatments are necessary. Many treatments involve administering drugs directly into the bloodstream of the animal. Any animal found dead should be diagnosed in order to remove the cause or to curb a disease outbreak.

Family Farm Seen Dominant In 1975

Will the family farm be dominant in 1975?

"Yes," predicts H. L. Stewart, an economist for USDA's Agricultural Research Service. "Family farms of 1975 will be even more specialized than at present, but will continue to dominate most types of farming."

Stewart believes the average size of family farms will increase, while the total number of farms will decrease. He foresees an increase in the present trend to adopt labor-saving and out-put increasing improvements essential to economic survival in competitive farming.

"Farmers of 1975 will employ others to perform more services," he says. He named such services as spraying, dusting, fertilizing, more professional management assistance, and help in buying and marketing livestock.

"Large-scale livestock feeding will become increasingly important in the West and Southwest, where there are expanding markets and abundant supplies of livestock, feed grain and forage," he says.

North Carolina State College

Five Animal Diseases You Can Catch!

Farmers and veterinarians are most likely to catch diseases that are carried by animals . . .

Condensed from Wallaces Farmer

Merrill Oster

PEOPLE working around farm animals may be exposed to 101 different diseases that can be transmitted to man.

The animal diseases most commonly transmitted to humans are rabies, brucellosis, leptospirosis, erysipelas, and tuberculosis, according to John Herrick, extension veterinarian at Iowa State University.

Rabies is one of the most common of these diseases. Each year many animals are found to have this disease.

Spring increases the danger of spreading rabies because animals move about more. However, rabies has been diagnosed in every month of the year.

The symptoms of rabies may be described as a wide change in the behavior of the animal. A friendly dog may become vicious. A vicious dog may become friendly. The animal becomes nervous and excitable, and may hide out.

During this stage the animal may bite not only humans but other animals, and even wood and metal objects. Rabies is always fatal to the carrier but it can be prevented by a system of vaccination if used on healthy animals.

For persons exposed to rabies by bites or from contact with a rabid animal, it is important to take anti-rabies treatment. Even tho these treatments are painful, they may save a life.

Brucellosis cuts milk production in dairy animals and causes heavy losses in swine. It also is fairly common in humans. Hundreds of cases of undulant fever (human brucellosis) are diagnosed each year. This disease doesn't spread from person-to-person, only from animal to person (and animal to animal).

Undulant fever is found most often in farmers, packing house workers, and veterinarians. Direct contact with infected animals is required to transmit the disease.

Symptoms in the human are: fever, chills, sweaty spells, re-

Reprinted by permission from Wallaces Farmer, 1912 Grand Avenue, Des Moines 5, Iowa

current headaches, and persistent nosebleeds. Undulant fever can be diagnosed by a physician.

Leptospirosis is a relatively new disease in United States. Altho it is best known for its heavy losses in livestock, leptospirosis was diagnosed in many humans last year.

Diagnosis is made only after considerable clinical and laboratory work. That's why the disease isn't usually recognized until late in its course. The best prevention is vaccination against the disease.

Erysipelas in man is called erysipeloid. It is caused by a germ which can live for several years in certain soils. Man can contact it through broken skin from soil that has been infected by animal excreta.

The symptoms in man are a very rapid swelling and redness at the point of infection. Erysipelas may cause death by involving the heart valves. Or it may cripple the person with cronic inflammation of the joints.

It is fortunate that a vaccine has been able to develop effective methods of producing immunity, or at least a high resistance, to the disease. Also the prompt use of anti-erysipelas serum has cured the disease in both humans and animals.

Tuberculosis germs are found in three strains—human, cattle, and birds. Humans may contact TB both through cattle and from other humans. It is a highly contagious disease.

Tuberculosis has been pretty well controlled in livestock through our compulsory test-and-slaughter program.

It may be contacted through the air or through food and water. Usually children contact tuberculosis in some part of the digestive tract because the disease can be carried in by infected food such as milk.

The use of raw milk carries the hazard of contacting both TB and brucellosis.

Scotch Whiskey For Poultry

United Kingdom chickens are growing faster on a Scotch whiskey diet.

Malt distillers dried solubles, produced when the liquid remaining when malt whiskey is first distilled from fermented wort or "beer", is rich in B-vitamins and in proteins, and contains "growth factors."

In farm experiments, Malt distillers dried solubles increased the growth rate of broiler chickens by nearly 9% when replacing barley and 3% when replacing dried skim milk. —*Broiler Producer*

Breed Cows By Blood Type?

It's coming. You can also measure calve's udders to predict production . . .

Condensed from Farm Journal

Dick Braun

SCIENTISTS are tinkering with several new ways to get higher-producing cows, but three new ideas in particular show promise in Ohio experiments:

- Mate according to blood types of sire and dam—the right combination means high-producing offspring.
- The development of highly-inbred lines, then cross to put "hybrid" kick into calves.
- Pick high producers at calfhood by palpating, that is, measuring mammary development by hand.

For instance, the Ohio scientists have typed blood and found that cows with certain antigens probably produce more milk and butterfat, and possibly more non-fat solids, than cows with other type antigens.

An example: Cows that inherit blood type A from only one parent (heterozygous) produced 500 lbs. more milk and 10 lbs. more butterfat a year than other cows that don't have that type. They even out-produced cows with two type A parents (homozygous).

"The heterozygous animals are apparently more vigorous," say T. M. Ludwick and H. L. Barr, USDA and Ohio State University scientists.

Ludwick and Barr think this finding might be used first on bulls in artificial insemination studs. A cow with type A blood would be bred to a bull *without* type A antigens, or vice versa, to put the extra production kick in the calf.

The scientists are checking out other antigens. Type L calves are possibly smaller at birth and grow more slowly, than other calves, report Barr and Don Weseli.

Then there are the B complex antigens. Work at Ohio, and in Sweden, shows some relationship between these antigens and fat content of the milk.

Managers of bull studs have shown keen interest in the Ohio work. "I think that the day is not

Reprinted by permission from Farm Journal, Philadelphia 5, Pennsylvania

far off when we'll be blood typing those bulls, and probably some of the cow herds that use AI," says Ludwick.

Blood typing laboratories are ready to do the job. The Dairy Science Department at Ohio State University, Columbus, charges about $7 a sample; less if they use your herd in cooperative research. There are also laboratories at the University of California, Davis, and at the University of Wisconsin, Madison.

As for hybrid cows, the scientists are finding a hint of success from crossing certain lines that have been line-bred for several years.

They've developed several lines with good producing qualities and are crossing them to determine whether they have combining abilities they can rely on. That's what bull studs need.

Palpating the udders of young calves for size and development is a *better forecaster of future production than the dam's record,* say the Ohio scientists and others co-operating in regional breeding research projects.

Ludwick and his associates have palpated 3,500 calves and now have production records on 2,000.

As they hunt for surer ways to make the best matings and to predict what the offspring will produce, the Ohio scientists have pinned down seven factors and given them these point ratings:

Dam's production	2
Sire's proof on 5 daughters	2
Dam's type	2
Sire's Type	1
Palpation of calf	4
Body weight of calf (3 mo.)	3
Blood antigen combinations	5

Ohio is conducting the largest dairy cattle breeding experiment anywhere in the country, with more than 3,000 dairy cattle in 10 herds. We'll hear more from them.

"We're after economic production of more milk, fat, non-fat solids and size," says Ludwick.

Boost Lamb Crop

Flush feeding of range ewes before and during breeding slightly increased the percentage of lambs per ewe in Texas A & M College field trials.

Seven cooperating ranchmen noted the greatest response was with aged ewes in medium flesh.

Increase in lamb crops, by ranch, ranged from 0 to 20 per cent. Over 52 days, fewer dry ewes were found among the 810 flushed on cottonseed pellets. The resulting lambs appeared more uniform in age.

It Pays To Use Chemicals Safely

Safe use of agricultural chemicals helps assure high quality — and adequate quantity — of the Nation's meat supply . . .

Condensed from U.S. Department of Agriculture Leaflet No. 472

MODERN pesticides, drugs, and feed additives have an established place in livestock production.

They are important aids in safeguarding the health of livestock and increasing production efficiency.

All these chemicals cost money. It pays to use them *only in recommended amounts and with the proper method.*

When properly used, they are safe and effective. But some of them can be injurious to humans or animals if used improperly.

Residues of certain chemicals are stored in animal tissues. In some animals, these residues may accumulate little by little over a long period. Some residues remain in the bodies of livestock a long time, and others are soon broken down and eliminated.

By using recommended procedures, you can guard against harmful residues that would make your products illegal for sale.

Your Customers

Consumer confidence is vital to you and the entire industry. This confidence has been built upon high standards achieved in the production of healthy animals and their slaughtering, processing, and distribution under sanitary conditions, carefully supervised by trained meat inspectors.

The American livestock and meat industry has achieved an enviable reputation for wholesome meats.

Federal Meat Inspection is recognized throughout the world as a model for food safety.

The demand for your livestock and the prices you receive have always been dependent on the consumer's desire for and acceptance of meats, and the demand in the future will continue to depend on maintaining consumer confidence.

Your Responsibility

Avoiding harmful residues in animals you raise is your responsibility.

Laws protect consumers of meat from harmful residues. These laws also protect you, by

Reprinted from U.S. Department of Agriculture Leaflet No. 472,
U.S. Department of Agriculture, Washington, D. C.

requiring that manufacturers give specific instructions on the label for the safe use of pesticides, drugs, feed additives, and other chemicals.

These instructions are based on:

1. *Safe dosage* levels.
2. *Proper mixture* of materials used.
3. *Safe methods* of use.
4. *Safe time intervals* between application of materials and slaughter, to insure elimination of residues.

You can get the benefit of farm chemicals, protect your customers, and fulfill your own responsibilities, if you follow a few simple rules.

Follow These Simple Rules

1. *Carefully read and observe* to the letter all instructions on the label.
2. Accurately measure and thoroughly mix ingredients.
3. Use exact prescribed dosages.
4. Follow recommendations as to type, age, and condition of animals treated.
5. Use prescribed methods of administration.
6. Observe required time intervals between treatment and marketing of livestock.
7. Implant or inject materials only in recommended locations on the animal's body.
8. Guard against pesticide contamination of drinking water, feed, and utensils.
9. Observe safety precautions to avoid harmful effects to persons administering chemicals.
10. Be sure that forage has been treated only with permitted pesticides.
11. Feed treated forage only as recommended.

Always read and follow instructions on the label. If in doubt consult your County Agricultural Agent, vocational agricultural instructor or veterinarian.

How To Dispose of Pesticide Containers

Careless handling of pesticides and their containers has caused a rather large number of animal deaths. To properly dispose of unwanted pesticides or empty pesticide containers:

- Select a place that will not be dug up or plowed, and where water from the area will not seep into wells, ponds, and streams.
- Crush all metal containers and break glass containers before burying them.
- Bury all containers deep enough so that they'll be covered by at least two feet of soil.

Barn Ventilation

This is an important problem in colder regions of the United States . . .

Condensed from American Agriculturist

Dr. J. W. Bailey

VENTILATION in your barn can cause more problems than you think.

Not so long ago we stopped at a farm where the owner was worried about the way his cows were coughing. They didn't seem to be sick, and they stopped coughing shortly after they were turned out doors in the morning. On another farm the owner complained that the cows weren't milking as they had in other years, although they were getting the same kind of good feed.

At about the same time we visited a dairy where the milk had been refused at the plant because of a bad odor. On still another farm many of the calves were being lost because of scours, and the trouble was so bad that it resembled a contagious disease. These cases were all alike in one respect, for they were all caused by poor barn ventilation.

You can make a quick check of the ventilation in your own barn by carefully taking a look at the wall and ceiling and windows. If the walls and ceiling are wet, or if there is frost on the windows and walls, it means that the inside temperature and humidity is too high. This in turn means that there isn't enough fresh air coming in, and that the stale air isn't going out fast enough.

The ventilation in your barn may be faulty if changes have been made, even though it has been efficient in other years. You may be keeping more or bigger animals and your ventilating system may not be able to handle the extra load. A small amount of additional warm air may make quite a difference, for an ideal barn temperature should be around 50 degrees, and this may call for five or six complete changes of air every hour.

Efficient ventilation will increase your profits in several ways. For a starter, experiments have shown that proper ventilation can increase milk production up to 5 percent. In addition, you'll have less trouble with calf scours,

Reprinted by permission fom American Agriculturist, 10 North Cherry Street, Poughkeepsie, N. Y.

pneumonia, and other troubles if the animals get plenty of fresh air and are kept in quarters that are free of dampness. Then you'll get away from those "barny" flavors in milk if cows don't breathe in a lot of bad odors shortly before milking time. Finally, woodwork won't rot out nearly so fast in a dry barn.

From a practical standpoint, thermostatically controlled window fans are probably the best way of ventilating a barn. In small barns a single fan may be enough, but two fans will usually be needed in the average barn. One is controlled by a thermostat and starts automatically when the temperature reaches a certain mark, and then cuts off when it has dropped below it again. The second fan is smaller and runs all the time, thus helping to prevent wide fluctuations in both temperature and humidity. In exceptionally large barns, more than one pair of these fans may be needed.

When fans are installed, proper intakes should be provided to make sure that enough fresh air can get in to replace the stale air as it is drawn out. The continuous slot type of building that provides a one-inch slot between the barn wall and ceiling into the hay mow is very efficient, for the incoming fresh air moves down the walls so it causes no drafts.

Some barns may be in need of insulation to keep too much cold air from coming in. Ceiling insulation can be taken care of by putting a couple of feet of hay or straw on the haymow floor. Insulation can be provided around double sliding doors on the barn ends by installing a second set of doors that are hinged at the top and fitted into the doorway inside the regular doors. These extra doors can be swung out of the way when entrance or exit is needed, and lowered to shut out the cold at other times. Loose-fitting window sashes may let in cold air, too, and require the addition of storm windows or covering with sheets of plastic. If the windows are set in concrete walls, they can be replaced with glass bricks.

A good mineral mixture for sheep consists of two parts of bone meal to one part of loose, iodized salt, say Purdue University animal scientists.

If you already have a good ventilating system in your barn, depend on it, and don't open doors and windows if the weather happens to warm up a little. Both the temperature and humidity may then vary widely in a short time, and drafts through the barn can result in outbreaks of pneumonia.

Chimney Smoke

by Irene Rudie

Come, Fellowmen, this Christmas Eve,
Come close and let your eyes perceive,
And then eternally believe.

—Beryl Stewart

The children may not long remember the toys they get for Christmas, but they'll never forget the fun around the kitchen table, rolling out their own holiday cookies, twisting and patting strips of dough, then poking raisins and nuts into the frosting.

★ ★ ★

Even a few months of time can change our attitudes toward things. Think, when you enjoy the warmth of a soft woolen blanket, how repulsive it would have been on a hot night last July.

★ ★ ★

What would you do if all the people you casually invite to "stop in sometime" would actually do so?

★ ★ ★

Probably never in the history of fashion have women been able to wear so many kinds and shapes of hats and still be in style.

Have you ever seen snow-crystals falling from the trees after the sun comes out? Bushels of diamonds wantonly spilled for our pleasure!

★ ★ ★

People who save last year's Christmas wrapping paper, like liars, have to have good memories, so as not to return gifts wrapped in paper chosen by the recipient.

★ ★ ★

Our little house dog—a Toy Terrier-Dachshund mixture—believes in "togetherness". When the family gathers around the piano to sing carols on Christmas Eve, the little pooch will be "singing" right along with us.

★ ★ ★

How do women who don't drive and have no driver's license for identification ever get a check cashed when s h o p p i n g in a strange store?

How To Handle The "Downer"

So your cow is "down" — what should you do? . . .

Condensed from Penn-Jersey Farming

J. J. Mettler, Jr., D.V.M.

FOR the farmer or veterinarian who is confronted with a "downer cow", it is many times downright discouraging.

The "downer" simply is any cow that, for various reasons cannot get to her feet with ordinary help or treatment.

Three Main Types of Downers

There are three main types of downers, plus a fourth more vague type that is hard to place with the other three. First and most common is the injured downer. Usually she has just calved and is paralyzed due to the size or position of the calf at time of birth, having injured a nerve or broken the pelvis, or both. She might also be injured due to a delay in treatment for milk fever, or from falling and breaking a bone, or tearing a muscle or tendon while walking on a slippery floor.

We can prevent this type by watching our cows more closely at freshening time, helping them to calve when necessary, and doing it in a sensible, humane way. We see fewer paralyzed first-calf heifers every year since many men are breeding their smaller heifers to small breed bulls. If you do breed Holstein or Swiss heifers to bulls of their own breed, make up your mind that you have to be with every one of them at calving; otherwise, sooner or later you are going to have a downer. Most other injuries can be prevented by more careful liming of walks and a little more care in handling livestock.

The second type of downer is the one that is intoxicated either from food, such as apples, wheat, green corn or frozen sudan grass, or from the after-effects of disease, such as the cow that goes down after an attack of septic mastitis. These, too, can be prevented. But accidents do happen and, if caught early, most of these cases do respond to treatment by a veterinarian.

The third type of downer is the cow that is weak from old

Reprinted by permission from Penn-Jersey Farming, 311 West 43rd Street, New York 36, New York

age, poor nutrition, or from twins or triplets. Most of these do not respond to treatment when they go down. We cannot predict when an old cow is going to go over the line, but we can feed better.

When Spinal Cord is Affected

The fourth type perhaps could be called miscellaneous. Some of these are from tumors or disease affecting the brain or spinal cord. We cannot prevent these with any of the knowledge we have today, but early diagnosis by your veterinarian can save something for salvage. Some are from peritonitis due to hardware or an infected uterus. We do not know why these particular animals go down unless it is from pain. We also see rare cases such as those caused by grubs entering the spinal canal but, since these are rare, they do not warrant discussion here. Tuberculosis of the spinal cord was once a common cause of downers. Thanks to the work of many good men, this is a thing of the past.

The average American, each year, receives the total output of 7.4 acres of land.

One specific disease—listeriosis or "circling disease"—causes downers from time to time. We will not consider nervous acetonemia as a cause of downers because these cases, like milk fever cases, do get up with treatment by a veterinarian.

One of the greatest aids for a downer cow has been the hip sling that has come into being in recent years. There is no other mechanical means of lifting a cow that works. The belly sling, utilized to lift horses, only acts like a squeeze on a cow, as any good cow man knows, a 10-year-old boy can lay down a 1,500-pound cow with a properly placed squeeze. The hip sling lifts a cow over the hip bones and soon settles the question in a man's mind, "If she could get on her feet once, could she stand?"

Time and Cow Sense

Time is the second greatest aid to a downer cow, providing it is seasoned with a little good cow sense. A downer cow should be moved by a stone boat, if necessary, to a place with a dirt or sod floor. If she cannot be placed out of the sun, a shelter can be built. In Winter, a "tent," built in a dirt-floored machine shed, will save more than one good cow. A good big box stall with a concrete floor is satisfactory if enough bedding is provided. The cow should be rolled from side to side at least four times a day, and milked if your veterinarian deems it necessary. Do not forget to feed and water her.

We cannot go into specific treatment for each type of downer. Your veterinarian will work that out on each case for you, but he does need your help. Follow his directions and do not give up too quickly unless he tells you the case is hopeless.

There is a cause for each and every downer. Good cow men see to it that those that can be prevented are stopped before they happen.

Get Higher Yields Of Small Grain

"High yields of small grain are dependent upon having a sufficient number of healthy plants per acre," says F. H. Smith, South Carolina plant disease specialist.

"Factors which bring about poor stands are: Use of poor quality seed which are usually of low germination, poor land preparation, faulty planting, lack of adequate crop rotation, lack of seed treatment or improper seed treatment, and others," he says.

Smith based this statement on research, extension, and grower reports and observation of many grain fields in South Carolina. "Growers must plan ahead and take steps to correct these factors before time of planting," he continues.

Growers are encouraged to plant certified seed. All grain seed should be treated with one of the recommended chemicals. For South Carolina, these are Ceresan - M, Panogen, and Ortho LM. The recommended dosage should be used and the treatment applied at least several days before the seeds are planted.

Proper crop rotation (at least a 3-year rotation is recommended), a well-prepared seedbed (retains moisture longer), and adequate fertilization will also help assure a healthy stand of plants.

"Growers must not ignore any of the recommended grain production practices if they wish to obtain top yield of quality grain or grazing," Smith says. "These practices are closely linked, like a chain, and omission of any one may result in failure.

ClemsonCollege

Pigs are "space oriented" regarding their feeders, L. A. Facto, Iowa State University has reported.

In general they prefer a feeder near the water fountain regardless of which of several different-tasting diets it contains, he said. A companion study had shown that pigs did prefer certain flavors.

LETTERS TO FARMER'S DIGEST

Our readers write many interesting letters to Farmer's Digest. Some relate personal opinions and may be quite controversial. Others tell personal experiences and problems and, perhaps, ask your advice. At any rate, we are sure these letters will interest you and, we hope, prompt you to write a reply or a letter on a subject of your own.

FARMER'S DIGEST:

I have read a letter where a dairyman states that he allows his dairy cattle to drink grass silage juice as it comes from the silo in spring with apparent benefit to his cattle. Have you ever heard of such use of this juice by other dairymen and if so with what results?

We have some 20 acres, more or less, of well-established fescue which comes in well for winter pasture, but our cows avoid it in summertime. We were recently told by an employee of the U.S. Agriculture Department that if an application of nitrogen were put on the fescue it would make it more palatable for the cow and they would allow none of it to go to waste. Can you make a recommendation on this?

Thanking you for your favors and courtesies, I am

Strasburg, Virginia

Farmer's Digest
Fort Atkinson, Wis.

I am probably only one of many men that receive either your publication or other farm magazines, thereby keeping alive hopes of getting back on a farm someday.

I was raised on a farm in Ohio but not having a home to return to after the war, I settled in California and tried to make plans to someday return to a farm.

I read every article in the Farmer's Digest and believe that the concept of your magazine is fine.

I would like to express my opinion on farming. I believe that a great part of the farmer's trouble of today is caused by their own greed. They seem to be trying to keep up with the "Jone's" so to speak. Farming today has become a field of mechanical monsters that have been sold to farmers by machinery manufacturers who have convinced farmers that it's impossible to farm without them. Farmers see the city people driving shining new cars and they think they must have a new car to prove to the city people that they are making big money too. I wonder if they ever thought of how many of those new cars are paid for. Well, I know that if my place of work shut down for two months, 80% of the employees would lose their cars. I believe that if farmers could ignore these lures of how much less work it will be if they buy all of the farm machinery being sold, they would be able to farm at a slower pace, produce less, make some money from what they produced, and we would gradually consume our surpluses.

I think one reason the farm boys and girls are leaving the farm is they don't feel they are needed. Dad and Mom have all the latest machinery so why stay at home. Of course they don't think of the fact that Dad and Mom have to work like Trojans to pay all of the payments due and that Dad will probably drop of a heart attack.

I knew farmers that were doing field work, pitching hay, oats, and wheat by hand when they were in their seventies and they didn't owe anyone thousands of dollars for machinery either. One of the most successful farmers I ever knew once told me that he believed that a man should never set his income goal above his own capacity. He had established his goal at clearing $1000 a year above expenses. He farmed 200 acres with the part time help of his retired father and the full time help of a brother on a fixed salary. He did general farming and raised Milking Shorthorn cattle, sheep, and pigs.

I would gladly trade my job for a chance to return to this type of farming and with God's help someday I may.
Believe me if it weren't for the retirement pensions city people had to pay into, there would be very few ever retire. I have had a well paying job ever since I left the service but the cost of living leaves you very little to save. After 14 years of Civil Service all

I have to show for it is my retirement fund of about $4000. If that's what farmers are striving for, God help them for the city people won't.

I hope someday to use my retirement money and buy a farm in Oregon or Washington as land is still reasonable there and people are more humane toward their neighbors and don't seem to be trying to make a so called "killing on the farm."

Well, I guess by now my opinion has turned to steam and I'll bet you think I'm bitter, which I am. I think your Farmer's Digest is great and I feel that if I never get a farm of my own I have still enjoyed it.

G. B. Buchanan

Alameda, California

Who Owns The Farm?

Traditionally, farmers like to pass down good farms to their sons. But sometimes there are more sons than land, some sons may prefer other professions, while others may lack skills or capital needed.

While inheritance is becoming a more important way of starting in farming, it also is becoming more difficult. When farms were small and taxes were low, it was easier. Now farms are extensive and expensive. A productive unit usually involves many thousands of dollars worth of land, buildings, equipment and livestock. In some cases, inheritance taxes take a big bite. In others, operating set-ups may have to be liquidated wholly or in part to pay taxes and debts or to settle up the estate.

In some states, families are incorporating farms to get more capital into the business, with one person designated as manager, just as in business corporations. The trend has both advantages and disadvantages. While it spreads the risk and the taxes, it also spreads the profits. It could be another step away from individual family farm operation. *The Farmer-Stockman*

What's The Future For Medicated Animal Feeds?

Will medicated feeds replace the veterinarian? This author says, "No." . . .

Condensed from Western Dairy Journal

Blaine McGowan, D.V.M.,
University of California

THIS question is not easily answered, nor should an answer be made lightly. It would be shortsighted to answer without a searching look at all phases, aspects and facets of the animal industry.

On occasion we all lose sight of the fact that veterinarians, nutritionists, geneticists, animal husbandmen, feed manufacturers, retailers and veterinary products manufacturers are all engaged in a profession or occupation that has one common denominator—service to the livestock industry. The customer or recipient of our combined services is the livestock operator, who is becoming increasingly aware of the influences of breeding programs, husbandry practices and disease on the efficiency of his operation.

Quality. He wants—and should get—the highest quality prepared feeds; the latest information on nutrition, genetics and husbandry regimes; and the most effective animal health program for his particular operation. I would be presumptuous if I tried to judge all these services, but on the subject of animal health I am firmly convinced that our mutual customer is not receiving the optimum service that could be rendered. Nor have we more than scratched the surface of this portion of our allied and combined services.

There is a magic appeal in a medicated preparation sold to cure all diseases and take care of all disease problems. When this type of product, a medicated feed, was first made available to livestock producers, many bought blindly in the false belief that their disease problems were at an end.

Credit. In the animal industry, new concepts, ideas and products

Reprinted by permission from Western Dairy Journal, 4511 Produce Plaza, Los Angeles 58, Calif.

frequently get more credit at first than they deserve but, as time passes, they find their suitable niche in the scheme of management, production and disease prevention. DDT was initially supposed to eliminate the fly—and antibiotics, mastitis—but continued use and critical evaluation showed that they were only an aid in prevention, not a panacea. Medicated feeds are following this pattern, and I believe we are now entering the phase of more critical evaluation of these products.

Adding medicaments to a ration is a sound concept and will produce many benefits to the livestock industry—but only in direct proportion to the intelligence of their application on the basis of their proven merit and in conjunction with an over-all herd disease prevention program supervised by a veterinarian.

Dehorning done early avoids a possible loss of weight by the animal and the unsightly horn stubs that sometimes result if the operation is delayed.

Complex. The allied and interlocking professions and occupations that serve the livestock producer should all be vitally concerned with the success of his business, which can be no better than the combined performance of the animal units under his supervision. The trained nutritionist is called on to devise rations that produce the most meat and milk; the trained feed manufacturer to formul..te, blend and mix these rations; the trained geneticist to guide selection of animals for higher production; and the trained animal husbandman to take these techniques, along with many others, and develop a sound and economic management and husbandry practice. Why, then, should we not call on the veterinarian, a man trained in animal health techniques, to devise, supervise and conduct disease prevention programs designed to allow the other services to exert their maximum influence on healthy animals?

The allied services have been working s e p a r a t e l y too long. There must be a closer bond between production programs and disease control. These services are inseparable and indivisible in the modern livestock business. It is no secret that undiagnosed, unrecognized or improperly treated disease can negate the best nutritional and husbandry regimes; conversely, improper nutrition, care and management of animals can most assuredly affect their health.

Antagonism. It would be highly facetious to say that there is

not some antagonism among the various animal-production and health services. Some leaders in the feed industry have said that adding medicaments to rations has been done primarily to cope with competition, and that they do not intend to become veterinarians. I believe, by and large, that this is the feeling of the industry.

Conversely, I have not seen many veterinarians enter the feed manufacturing field. Why, then, shouldn't we look toward increasing cooperation among all who serve the livestock industry? I sincerely believe that the health needs of domestic animals can best be met by trained veterinarians.

Pregnancy examinations should be routinely performed on dairy and beef cattle. A cow must produce a calf every year for maximum profit.

I further believe there is a great field in preventive medicine —and a great need for veterinary service in that field. The question may then be posed; If this need is so great and the opportunity exists, why are not more veterinarians engaged in this type of practice? Many factors are involved, but the following seem quite pertinent to me.

Requirements. First of all, let's not lose sight of some important and basic requirements that must be met by this type of veterinary practice or by any other service to the livestock industry. The services rendered must be paid for by a livestock producer; there must be sufficient compensation to assure a reasonable living for the person who provides these services; conversely, the services performed must more than pay their way.

Secondly, assuming that the above requirements are met and that such services are eagerly sought by the livestock industry, are there enough trained veterinarians to fill the needs of the animal industry?

Need of Vets. Let's look now at some figures on the numbers of veterinarians that might be needed to cover the field of preventive medicine adequately. Veterinarians engaged in specialized dairy practices have estimated that, as an individual practitioner, they can properly care for 3,000 cows. Add to this cattle and calves on feed at any one time and assume that one veterinary practitioner could properly care for 10,000 animals; also additional veterinarians would be needed for the feedlot phase of the beef cattle industry alone, without considering cow and calf operations.

In addition, the sheep industry

is receiving insufficient veterinary service, and additional veterinarians would be necessary to render optimum services to this portion of our livestock industry. It can readily be seen that many more veterinarians could be employed in preventive medicine practices.

Doubt. I seriously doubt that many of the veterinarians engaged in small animal practice could be induced to change to a livestock disease prevention program, nor do I feel that a great many of our general practitioners could devote full time to such practice. We must not forget that the general practitioner, living in areas where pets and small livestock operations comprise the majority of his practice, is very necessary to the industry. It seems to me, therefore, that any immediate move toward a disease prevention program must consider procuring more veterinarians or shifting the practices of a major portion of our present veterinary manpower.

Foot rot of cattle and sheep often develops during rainy and cold weather of fall and winter. The organism gets its start when feet become softened and damaged in wet, muddy lots and pastures.

Training. A third factor to be considered is the training of students for an over-all herd health practice. If we intend to call on the veterinary profession to conduct a preventive medicine type practice, more emphasis should perhaps be placed on this during the formal training years. To be sure, graduates now receive instruction in nutrition and feeds and feeding, but it has been proposed that additional training in these subjects would better equip graduates by sharpening their cognizance of the nutritionists' problems, deepening their appreciation of the many interdependent forces between nutrition and health, and allowing them to be more conversant with everyday rations and their use.

Similarly, graduates receive instruction and training in the application of disease control measures on a herd-wide basis. Some of us feel that additional emphasis could profitably be placed on this type of training as well as on instruction leading to a stronger appreciation of the inter-relations between disease prevention and husbandry and management practices.

Diagnostics. These comments on veterinary training lead to still another factor to be considered. A graduating veterinary student has undergone a minimum six years of intensive college training.

Much of this time is spent preparing him to diagnose disease, without which there can be no accurate treatment, no basis for intelligent disease prevention and control.

We have come to the point where feed manufacturers, feed retailers and allied industries should ask themselves a pertinent question and render an honest and critical answer. That question is: Do you wish the veterinary profession to assume responsibility for the health of our meat and milk producing animals, or do you wish to continue as you are going today and expand your activities in this field?

I certainly cannot answer that question, but I believe leaders in the livestock industry are concerned over this question and want the veterinary profession to assume the health responsibilities of the livestock industry. If such is the case, I think we should take definite steps in the direction of coordinating the efforts of the veterinary profession, feed manufacturers and retailers, nutritionists, geneticists and animal husbandmen.

If feeder cattle have been eating high-shrinkage feeds, as silage and beet pulp, condition them for several days before shipping by reducing the amount of grain and rich feeds and replacing with dry feeds.

Forum. I would like to suggest that a forum be established to represent livestock producer organizations, feed manufacturers and retailers, veterinarians and animal husbandmen. To such a forum could be directed the following questions:

1. Can the livestock producer spell out his animal health requirements and how he feels they should be met?

2. To what extent can the veterinary profession meet present preventive medicine needs of the livestock industry?

3. Will it be necessary to train more veterinarians than at present to provide optimum animal health service to the animal industry?

4. On a local level, can veterinarians and feed retailers devise a working formula whereby the livestock producer can use medicated feeds with the added service of veterinary consultation?

5. Would it be profitable to seek the services of an unbiased agency to critically evaluate and make known the merits and limitations of feed medicaments?

Jobs. Such a forum could also undertake the following tasks:

1. Function as a clearing house for new ideas and concepts from

all sources to improve the efficiency of animal production.

2. Stimulate cooperation among all of us who are a part of the livestock industry.

"Will medicated feeds replace the veterinarian?" My answer is "no." However, I sincerely believe the indiscriminate use of these feeds without intelligent integration into a complete disease prevention program supervised by a veterinarian will greatly limit the level of animal health that could otherwise be attained.

Millions Lost on "Look-Alike" Diseases

"Look-alike" diseases which strike barnyard animals are costing farmers millions of dollars, according to a forecast made by the American Foundation for Animal Health.

Some diseases look so much like one another it is impossible for the farmer to tell them apart. The result may be delay in getting proper treatment started, lack of quarantine to protect healthy livestock, and further heavy losses in milk and meat production.

Among diseases which have similar symptoms, are milk fever and ketosis, leptospirosis and anaplasmosis. Also, grass tetany may resemble milk fever. In swine, two of the most costly 'look-alikes' are said to be hog cholera and acute swine erysipelas.

The best safety measure is to have a veterinarian make a diagnosis and be sure which disease is really causing the trouble, it is advised. *—Louisiana State University*

Virus Cancer In Poultry Is Contagious

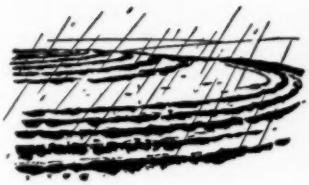
A study of poultry cancer indicates that a type caused by a virus is contagious.

The study, at the U.S.D.A.'s Regional Poultry Laboratory at East Lansing, Michigan, proved that the cancer, known as rous sarcoma, can be transmissable by direct contact between birds. It was previously thought to be non-contagious.

These studies with poultry establish more firmly the belief held by many scientists that viruses cause some forms of animal and human cancers, says B. R. Burmester, who conducted the experiments.

The studies suggest that simple virus-caused cancers may also prove contagious. *—Michigan Farm News*

Watersheds Show Their Stuff



Heavy rains this year really tested the country's new watershed developments. Fields that would have been under four or five feet of water went unharmed . . .

Condensed from The Kentucky Farmer

Herschel Hecker,
U.S. Soil Conservation Service

"GREATEST thing that we have ever done," was the way a farmer in Kentucky's Plum Creek Watershed spoke of the development program.

A "toad strangling" rain has now tested out the Plum Creek Watershed by dumping 5 inches of water in 7 hours on farm land in Shelby, Spencer, Bullitt, and Jefferson counties.

These counties make up the Plum Creek Watershed, one of the four pilot watersheds set up by the federal government's Soil Conservation Service, and with the cooperation of state and local agencies.

Because the watershed was developed, the farmer who made the comment above saw his land saved from disastrous flood waters.

"Nine acres of oats which I have growing in the bottom along the stream were saved by the improvements," said James Stallard, another farmer living in the Watershed. "I estimated that water would have been 4 or 5 feet deep near this point had it not been held back by the dams."

Holding more of the water that falls on upland areas and protecting otherwise good land from disastrous flooding continue to be two of the biggest challenges facing large areas of our country.

Kentucky began concentrating on soil and water problems on a watershed basis with four federally sponsored pilot projects, seven years ago. The whole idea of watershed development looked almost impossible at first glance—that is it did several years ago. Today, square miles are substituted for acres, and flood detention structures take precedence over the familiar farm pond. Where a few farmers were involved before, now it takes hundreds to make the project work when the hard rains come.

Communities Unite

It's been downright amazing to

Reprinted by permission fom The Kentucky Famer, Middletown, Kentucky

see whole communities unite to smother their problems under a blanket of well-planned and coordinated conservation measures.

Take the Upper Green River Watershed, for example.

Omer Lewis, Stanford, says that this watershed "has become a living, growing thing among the people. Attitudes are changing and our standard of living has improved," Lewis said.

Lewis himself is secretary of the newly organized watershed conservancy district and a former associate supervisor for the pilot watershed. Looking to future work, Lewis says: "We haven't much more than gotten started yet."

Back last June, folks in the Upper Green River watershed had a real gulley washer. More than 3½ inches of rain fell.

"If it had not been for those dams, the water would have washed me away," said Curtis Gooch, who lives on the South Fork of Upper Green River. "Before the dams were built, the farmer who owned this place lost 60 acres of red clover hay after it had been cut, and the water got into his house," said Gooch.

Bridge The Gap

Current watershed projects, set up under the National Watershed And Flood Prevention Act, are mainly for the purpose of solving those problems too big or difficult for the individual land owner. They bridge the gap between simple, on-the-farm conservation practices and the large, downstream flood control projects.

While the four pilot watershed projects have officially been completed, the work on small watershed development continues on. Both state and local agencies cooperate to make these projects the success they are.

In Kentucky, conservation-minded farmers are now working with federal, state, and local conservationists on 11 watershed projects. Six more are in the planning stage. The estimated total cost of the eleven watershed projects now in operation is $28,603,000.

Heavier Lambs

Creep feed early lambs to get extra weaning weight. Prof. E. N. Needham of Ontario Agricultural College advises you to start them on feed at 10 days to 2 weeks with what they can clean up in a day. Use either rolled oats and calf starter pellets, or a ration of 20 lb. oats, 20 lb. cracked corn and 20 lb. bran. Feed a bit of second-cut alfalfa too.

—The Country Guide

Fertilizer Tested In Wheat Field Plots

Twelve of 14 farmers taking part in unique field-size demonstrations are convinced fertilizer pays on wheat . . .

Condensed from The Farmer

APPLYING fertilizer on only 67 acres of wheat—the first crop he ever fertilized—resulted in $796 extra net profit this year for Iver Anderson, Beadle County, South Dakota.

Mr. Anderson wasn't figuring on using any fertilizer last spring until shortly before seeding time when Orval Collins, manager of a local elevator, drove out to see him.

"We'll provide you with enough fertilizer to treat about 50 acres of wheat according to soil test recommendations. If the fertilized wheat doesn't outyield a five-acre check strip, you won't owe us a penny for the fertilizer," was the proposition Mr. Collins made. Behind the offer was a two-state "50 and 5"-acre fertilizer experiment, conducted by a major feed, grain and fertilizer company to demonstrate that fertilizing will pay. Officials were so sure it would pay, in fact, that they made the same offer to seven other farmers throughout North and South Dakota. They had conducted similar trials on nine farms the year before.

In each case the company offered to furnish enough fertilizer for about 50 acres of wheat, plus a spreader attachment (worth about $200) for each cooperator's grain drill under the "no response, no charge" agreement.

Mr. Anderson welcomed the offer. What could he lose? If fertilizer didn't pay its way, there was no charge. If there was a yield increase, only the fertilizer costs would be deducted from the value of the increase. Any profit left over would go into his own pocket. Mr. Anderson already had the spreader attachment. Otherwise it, too, would have been provided by the company, with him reimbursing them at harvest, but only to the extent which that cost (as well as the fertilizer cost) was

Reprinted by permission from The Farmer, St. Paul 1, Minnesota

covered by the value of the yield increase due to fertilizer.

Adding fertilizer paid off—handsomely. The demonstration field was seeded to wheat and fertilized (69.7 pounds of 33½-0-0 per acre on 67.4 acres) on April 19. The fertilized field yielded 27.8 bushels per acre—8.1 bushels more than the unfertilized check strip (7.46 acres) which was located down the center of the fertilized area.

At $1.80 per bushel, actual market value of the wheat, when combined and hauled to the elevator for weighing, was $982.69 extra, gross value, for the total acreage, and, $14.58 on a per-acre basis

He Paid Fertilizer Bill

According to the agreement. Mr Anderson was to pay for the fertilizer only if it showed a yield

Africa has no native sheep.

increase. It did, and he gladly wrote the company a check for $185.82, the cost of fertilizer, had he bought it outright on his own last spring. Subtracting this fertilizer cost left him $796.87 extra *net* profit from the 67.4 acres of wheat he fertilized. If he hadn't already had the attachment for his drill. deducting this cost (about $200) would still have left him nearly $600 in added profit.

Mr. Anderson's spectacular return is almost twice the "rule of thumb," which says that, on the average, you can expect about three dollars return for each dollar invested in fertilizer. In this case, each dollar invested in fertilizer returned five dollars in added wheat ($2.77 worth of fertilizer per acre produced 8.1 bushels "extra" wheat worth $14.58 per acre.)

The moisture situation in Mr. Anderson's area was "fair" throughout most of the growing season, with total rainfall short of the long-time average. Total precipitation for the Huron area from Jan. 1 to Aug. 1 amounted to 9.68 inches—about two inches short of average.

A year ago when Mr. Anderson was originally scheduled for a"50 and 5" experiment, drouth forced abandonment of his trial. But last year's results on nine other farms, showed fertilizer accounted for an average of $303.63 extra profit per farm, despite a widespread drouth, which affected all demonstration plots to some extent. Total average fertilizer costs amounted to $184.40. In no case did the combination of fertilizer and drouth result in reduced yields on the treated areas.

Several of the seven farmers who joined Mr. Anderson in participating in the company demonstrations this year experienced

more than the usual amount of hot, dry weather. But adverse conditions weren't as widespread as during last year's growing season.

Here's how this year's wheat yields on fertilized fields (approximately 50 acres each) compared with yields on unfertilized check strips (approximately 5 acres) on each of the seven other farms:

At Seneca, S. Dak., Harold Bergerson found straight nitrogen failed to give an increase, but an application of 24-20-0 gave approximately five bushels more wheat per acre.

At Millarton, N. Dak., results on the Theodore Krein farm were somewhat indefinite, due to hail. Yield figures showed approximately a five bushel increase from fertilizer. However, part of the fertilized area had been swathed prior to hail, whereas the unfertilized area had not.

On the Olaf Solberg farm near Stanley, N. Dak., approximately 50 acres of fertilized wheat outyielded the check strip by 2.81 bushels per acre.

Richard Spenct, Loma, N. Dak., found fertilized wheat averaged 3.92 bushels more per acre than the no-fertilizer check.

There was an increase of 1.3 bushels per acre in favor of fertilizer for Holly Van Berkom, Powers Lake, N. Dak. However, Mr. Van Berkom feels fertilizer was not given a fair chance. There was a draw running through the fertilized area which did not extend into the check strip. This draw was heavily infested with wild oats and produced little or no wheat. This decreased the value of fertilizer, which was calculated on the basis of average yield for the entire fertilized area.

There were two cases in North Dakota where fertilizer produced no apparent yield increase—on Vender Olson's farm, at Starkweather, and on Eugene Wahl's farm, at McClusky. Mr. Wahl had a higher yield without fertilizer than with it. What happened?

"We're not completely sure," says Clinton Zinter, agricultural representative of the sponsoring company and originator of the demonstration program. "We have always maintained, and still do, that soil test recommendations are the best guide in determining fertilizer rates. The field on Mr. Wahl's farm had been sampled, as had all test fields. Practically all of the treat-

Taking a soil sample is only one step in the right direction; you must follow through with the fertilization and liming recommendations.

ed test fields, including those on the Wahl and Olson farms, got off to excellent starts last spring. Their accelerated growth rate was visible throughout most of the growing season.

"But hot, dry weather hit test fields on the Wahl and Olson farms about the time fertilized wheat was approaching its critical, seed forming stage. Unfertilized wheat in the same fields wasn't quite as far advanced. Hot July weather apparently caught the slower-maturing wheat in a less critical stage of growth," says Mr. Zinter.

Increase Varied

Fertilizer response varied in other trials this past summer, also, which bears out his thinking.

Variations in fertilizer response in trials conducted by soilsmen at North Dakota Agricultural College are explained by Virgil Weiser, extension soils specialist, as being "largely determined by the stage of growth at the time hot, dry weather entered the picture. Drouth in the early stages of growth seemed to result in the smallest yield increases."

In summary, Carl Amstrup, another agricultural representative of the sponsoring "50 and 5" company, feels two year's results have shown these things about fertilizer usage:

- The main purpose—demonstrating fertilizer response to nonusers in areas where fertilizer use is still in its infancy—has been accomplished. Of 14 farmer-cooperators this year and last (some were repeaters from a year ago), findings on their own farms have convinced 12 that use of fertilizer pays.

- Yield results from the field-size plots generally support yield responses obtained with fertilizer on small, fractional-acreage plots.

- Average yield figures from participating farms show that use of fertilizer on approximately 50 acres of wheat has boosted yields of the single crop enough to pay fertilizer costs, plus cost of a drill attachment.

Get Pigs Vaccinated

Pigs must be vaccinated for hog cholera to prevent losses and the possibility of an epidemic, an extension livestock specialist, warns hog producers.

He said there is no cure for cholera which is the most serious of all swine infections. Disease control depends upon prevention through vaccination, so have your veterinarian set up a control program.

—University of Delaware

Snorter Dwarfs Are Still With Us

Although this problem is less frequent than at one time, research and caution are still needed . . .

Condensed from Nebraska Farmer

Marcia Ray

THERE are several different types of dwarfs. The most common type and the one that has presented a problem in beef breeds is the so called "snorter," "short-headed" or "brachycephalic" dwarf.

These animals are thick, pot-bellied, and short-legged, with bulging foreheads, undershot jaws, and protruding tongues. Other dwarf problems may be troublesome in individual herds, but according to E. J. Turman, associate professor of animal husbandry at Oklahoma State University, these do not constitute any real problem.

Many cattlemen are asking, is the problem of the "snorter" dwarf under control in the beef cattle industry?

This is not a question that can be answered by a brief "yes" or "no". Instead the answer is at least two-fold.

L. N. Hazel, professor of animal husbandry at Iowa State University, says the problem has been reduced from a serious one to an infrequent one. He reports that a great deal of progress has been made in reducing the incidence of dwarfism through the chief tool of the cattle industry—pedigree-clean blood lines.

E. J. Turman, associate professor of animal husbandry at Oklahoma State University, says the "present attitude of the beef cattle industry towards dwarfism is in sharp contrast to the fear, doubt and confusion accompanying its onset. The marked reduction in the occurence of dwarf calves in recent years is viewed as evidence that the problem is under control. The control measures responsible for this decline in dwarfism are pedigree selection and progency testing of bulls. Breeders have not, as yet, relaxed their efforts to combat dwarfism by these methods."

Many Undetected

Turman adds that there is no doubt that, although the numbers of dwarf carriers in beef herds

Reprinted by permission from Nebraska Farmer, 1420 P Street, Lincoln 1, Nebraska

have decreased, there are many that remain undetected. The increased use of dwarf-free bulls reduces the chance that these carriers will be detected, he says. Since it takes a gene from both a carrier cow and a carrier bull to produce a dwarf, the offspring of these "clean" bulls will not be dwarfs. The dwarf gene from the mothers may, however, remain in the herd population. This may then constitute a threat to the breed if breeders relax their efforts to control dwarfism, Turman warns.

For this reason research is continuing in an effort to develop an accurate diagnostic test which could be used if dwarfism should again become an important problem, he says.

USDA veterinarians have at last isolated a virus that is one of the causes of shipping fever, a costly and prevalent respiratory disease of cattle. The discovery represents a major breakthrough in the knowledge of this highly complex disease.

Dr. Keith Gregory, North Central regional coordinator of Beef Cattle Breeding Research, reports that breeders of beef cattle have done a very effective job of combating dwarfism. Research established the fact that dwarfism is inherited as a simple recessive. When this information was put in the hands of breeders, they proceeded to control dwarfism successfully through progeny testing and pedigree examination. Many foresighted breeders, Gregory points out, were early in recognizing the possible significance of this problem, and took measures to do something about it in the late 1940's and early 1950's.

The various breed associations which were troubled with dwarfism in their particular breeds were also very instrumental in curbing the dwarf problem. They helped to get the information to the breeders and encouraged the use of progeny testing and pedigree examination. These breed associations also gave the breeders a better understanding of the problem and helped them with the necessary work in controlling dwarfism.

Techniques for the identification of carriers of snorter dwarfism have been evaluated in research herds, but, according to Gregory, none has been developed with the degree of accuracy desired for effective control. None of these techniques has been recommended for use, none has had real impact. However, because of the possible recurrence of the problem, research continues on a somewhat reduced scale in an effort to find a highly accurate

method of identifying carriers.

This recurrence of dwarfism at a higher frequency would be possible if there is something about the "carrier" animals that causes them to be selected over clean animals. Research has indicated that on the average, carriers are characterized by a shorter cannon bone and a slightly shorter, wider head. These differences, though slight, and with many exceptions, could cause the carriers to be preferred in some instances.

Turman cautions against making too rapid adjustments in combating dwarfism. He says that in one study two estimates of the occurence of dwarf calves were set at only 0.2% and 2.0%. He agrees that frequency in individual herds was much higher, but says, . . . "although a dwarf represented the loss of a cow's production for that year, the major economic loss as a result of dwarfism resulted from the efforts of breeders to control it by wholesale discrimination against lines of breeding known to have produced dwarf calves. This pedigree selection, when based on complete information, was effective, but it resulted in a considerable economic loss to the owners of breeding animals with dwarf carriers in their pedigree. An even more serious consequence to the breed was the wholesale elimination of many valuable animals, and the retention of less desirable animals because they had clean pedigrees."

Meat hog certification means more pigs per sow.

E. J. Warwick, chief of Beef Cattle Research Branch, USDA, Beltsville, Md., reported two possible reasons why dwarfism became a problem when it did. Chance is one possibility—the gene may have just happened to occur in a few popular sires.

More likely is the possibility that the gene is not completely recessive, and the heterozygote was favored by breeders in their selection. (A heterozygote carries one normal gene and one dwarf gene.) This possibility, Turman says, is supported by the experience of breeders themselves, and by a limited amount of research.

The researchers were unanimous in reporting that snorter dwarfism is caused only and completely by a hereditary factor. This means that diet, mineral additions, management and nutrition and hormone therapy are unable to cure or alter this situation.

Whatever the r e a s o n s for dwarfism, the search continues for more complete control. While breeders of beef cattle keep on using progeny testing and pedigree evaluation, researchers con-

tinue to look for a method of detecting the carrier of the snorter gene. If this carrier can be detected sooner, even more can be done to control the problem through genetics.

Dr. L. A. Swiger, geneticist with the USDA, points out an added dividend of the continuing dwarfism research. Through this type of study in heredity, it is possible for researchers to gain knowledge of the physiology of growth and development of normal as well as abnormal animals. The knowledge gained from such research has much greater potential to the beef cattle industry than combating dwarfism, because of its usefulness in developing more productive and efficient normal animals.

Hay Safe To Store? Use Salt Moisture Test

Fire dangers are created when moist hay spoils and produces heat. A simple and reliable test using common table salt can be used to determine whether the moisture in hay is great enough to become a fire threat.

Here's how it works: Cut a small representative sample of hay to fit into a waxed 1 quart ice cream container; add ½ teaspoon of dry salt. Replace the cover and shake for about two minutes for loose storage hay and five minutes for chopped or baled hay. Then examine the salt in the sample.

If the salt is dry after the test, the hay is safe for storage. But if the salt is lumpy and damp, the hay is too moist for safe storage and is susceptible to spontaneous combustion.

This test has been proven to be more accurate than the hay maker's "feel" of the hay, which can be upset by perspiration on the tester's hand.

To be safe, loose hay should have a moisture content below 25%; chopped or baled hay must be below 20%.

—Western Livestock Journal

PROTECTION against milk fever in dairy cows apparently can be achieved with lower levels of vitamin D than had been previously recommended—20 million units per day, compared to the recommended 30 million units—it was found in a recent Ohio test.

Hog Cholera

Never let down your guard against this deadly disease . . .

Condensed from New England Homestead

TAKE only enough hog cholera virus to cover the head of a pin and you can start an outbreak of the most costly single swine disease known in America. It is considered to be the nation's No. 1 swine killer.

The virus of cholera is the most powerful in all the experience of veterinary medical science and kills more hogs than any other contagious agent, according to the American Foundation for Animal Health. It now costs farmers an estimated $50,000,000 a year in losses.

Although outbreaks of the disease can occur at any time, and often reach a second peak in late summer and early fall, early spring is the time when the threat is greatest. That is why authorities and livestock health groups have singled out cholera as a special target to prevent in swine herds.

This disease strikes quickly. It can be spread in several ways, but most often by contact with other infected hogs. The virus can also be picked up from water, feed or equipment contaminated by sick hogs.

Cholera can be brought onto a farm by replacement pigs, or on the shoes or clothing of visitors who have just come from a farm where the disease is present.

Dogs and birds also are suspected of carrying the virus from farm to farm. The disease also may be transmitted in uncooked garbage which includes pork scraps containing the virus.

This is a confusing disease, in that certain symptoms of cholera may look like symptoms of other diseases. Erysipelas is a case in point. As a rule, swine raisers should be on the look-out for such tell-tale warnings as these: "Slow" pigs that do not eat well. Dullness and loss of appetite. A tendency of pigs to remain in their nests, indifferent to being disturbed. A staggering, weaving gait, perhaps with knuckling at the lower leg joints. Other symptoms may include gummed or stuck eyelids, muscular twitching, convulsions, an occasional cough,

Reprinted by permission from
New England Homestead, 29 Worthington Street, Springfield 3, Massachusetts

and red discoloration of the belly skin.

There is no cure for cholera. However, if an outbreak strikes, it is an important precaution to have the veterinarian administer anti-hog cholera serum to those pigs which do not yet show signs of sickness.

The only real safety against this disease lies in having all pigs immunized AHEAD of the danger season. The key questions on this score are: 1) Exactly when should the immunizing be done? 2) Which type of vaccine should be used? For one thing, the pigs should be checked over carefully to determine whether they are in proper condition to take the vaccination. If they are not, it may be risky. Also, local conditions and the exact condition of the herd make a difference as to which type of immunization is selected. Both these scores need to be weighed expertly by the veterinarian before he determines when to proceed and which kind of vaccine to use. Animals in poor condition may not acquire solid immunization.

The selection includes several choices—a combination of serum and virus, "modified" live vaccines, or "killed" virus vaccines. Each has its place, but the exact selection is a matter for the experts.

Authorities have been considerably worried about the hog cholera situation in the past several years. Because widespread vaccination brought the disease under much better control, some farmers seem to have been lulled into a false sense of security. Some have taken a gamble and allowed their herds to go unvaccinated. This authorities feel, can set the stage for another wave of disastrous outbreaks . . . the kind which swept vast areas of the country a generation ago and devastated thousands of farms where swine were being produced.

The word from all authorities is "never let down your guard against cholera." It can lie semi-dormant for a year or so and then strike suddenly, wiping out all unprotected hogs in its path, and spreading through entire areas overnight. Prevention is the best rule . . . and with cholera, prevention means vaccination.

Another dream . . . by another scientist . . . Robert Zahour of Westinghouse . . . is that farms of the future may go underground . . . where temperatures, weather conditions, plant diseases, nutrition, and lighting can be accurately controlled . . . regardless of season or weather. Can you imagine how that might effect farming . . . throughout the world? *Michigan Farming*

FUN ON THE FARM

A Collection of Jokes and Humorous Farm Stories

A mental patient, staring through the bars, spied a farmer's truck. "Hey," he called, "what's that you're carrying?"

"Manure," the farmer replied.

"What's it for?" shouted the patient as the truck rolled on.

"I put it on my strawberries," came the distant reply.

"Holy smoke," the patient muttered, "I put sugar and cream on mine . . . and that guy's running loose?" —*A. I. Digest*

★ ★ ★

A child's question: "If the Lord gives us our daily bread, and Santa Claus brings the Christmas presents, and the stork brings the babies, then what's the use of having Daddy around?"

★ ★ ★

There seems to be two schools of thought on what qualifications are necessary to make a master farmer. One group contends that a master farmer is one who can pay his taxes without borrowing money. The other group believes a master farmer is one who is able to borrow the money to pay his taxes. —*Lake Mills, Iowa, Graphic*

What the average man wants out of his new car is his teen-age son.

★ ★ ★

A farmer who had a nice, well kept lake gave the local ministers permission to immerse new church members in the lake. They left his gate open many times. Finally, the farmer posted this sign:

"Positively no more baptizing in my pasture. Twice in these last two months gates have been left open by Christian people. Now before I chase my heifers all over the country again, sinners can just go where they are supposed to go!" —*Mrs. Floyd O. Davis* in the Progressive Farmer

★ ★ ★

Lectures are like steer horns, a point here, a point there, and a lot of bull in between.

★ ★ ★

Walking in his sleep, a farmer stepped off the porch, stubbed his toe on a stick which flew up and hit his face. Turning immediately back into the house, he said, "All right, Dear, I'll never say that again." —*The Furrow*

Square meals often make people round.

★ ★ ★

We were in North Carolina and asked directions on a country road of a mountaineer.

He pointed and said, "You go two out-of-sights down the road and turn left. Go another out-of-sight and thar you are."

"What do you mean 'out-of-sights'? we asked.

The mountaineer explained patiently as if talking to two morons, "You go down the road as fur as you can see; do the same thing again and turn left. Go as fur as you can see down that road, and thar's the house." —*Mrs. W. H. Jolly in American Agriculturist*

★ ★ ★

A boy becomes a man when he walks around a puddle instead of through it.

★ ★ ★

Years of living through disastrous floods on his small bottomland farm had made Ben proud of being able to take trouble without fussing. One year, however, the river not only flooded out his cornfield as usual, but chased Ben and his wife clear out of the house to the safety of high ground. When they returned to clean up the mess, it was even worse—during the flood, the river had changed course and had wiped out their farm entirely.

After Ben had stared for several minutes at the water where his house and barn had been, his wife began to fear that this final blow may have unhinged his mind. "S-say something, Pa," she said timidly.

But Ben was equal to the occasion. He took one more look, rubbed his jaw, and spat into the river. "Thorough," he said, "ain't it?" —*The Wall Street Journal*

★ ★ ★

If a machine can be made to do half your work, why not buy two of them?

★ ★ ★

The autoist hit a rooster while driving along a country road. Anxious to do the right thing, he located the farmer who owned it and said, "I just ran over your rooster and I'm willing to replace him."

"Fine," said the farmer, "let's hear you crow." —*Wisconsin R. E.A. News*

★ ★ ★

Mother nature is a remarkable woman, but she still can't jump from summer to winter without a fall, nor from winter to summer without a spring.

★ ★ ★

The U. S. Department of Agriculture has received a letter from a woman calling for a considered answer. "Could you possibly send me a booklet explaining the use of different poisons in the gar-

den?" she writes. "I have recently lost my husband and have a lot of various poisons on hand." —*Catholic Digest*

★ ★ ★

Tact is the ability to shut your mouth before someone does it for you.

★ ★ ★

A photographer was taking a picture of a farmer and his college-boy son. He suggested that the boy stand with his hand on his father's shoulder.

"It would be more appropriate," said the long-suffering parent, "if he stood with his hand in my pocket." —*Arkansas Valley Journal*

★ ★ ★

Flattery is the art of telling a person exactly what he thinks of himself.

★ ★ ★

"I can catch the 6:15 train," explained the hiker, "if you'll let me cut across your field."

"Go ahead," said the farmer, "but you'll catch the 5:45 if my bull spots you."

★ ★ ★

The morals of this world will not improve as long as we teach our children to act as we do.

★ ★ ★

An irate landowner had a sign printed for posting his property which read:

"No Hunting or Fishing. Survivors Will Be Prosecuted."

All that comes to him who waits are whiskers.

★ ★ ★

A bitter old country lady was bitten by a mad dog and was advised to make a will because there was the possibility of rabies. She wrote furiously for two hours.

"It looks like an unusually long will," her lawyer said.

"Will? Who's writing a will?" she snapped. "That's a list of people I'm going to bite."—*The Texas Future Farmer*

★ ★ ★

Little Johnnie had to stand in the corner at school for putting mud in a little girl's mouth. His mother was horrified when she heard about it. "Why in the world," she wanted to know, "did you put mud in Margaret's mouth?"

"Well," said Johnnie, shrugging his shoulders, "it was open." —*Holstein-Friesian World*

★ ★ ★

There are a lot of movies that are a waste of good popcorn.

★ ★ ★

A driver got stuck behind a big semi-trailer truck on the highway and couldn't pass. What's more, the truck driver would stop every 4 or 5 miles and bang on the back of his truck. Finally, after 100 miles of this, the truck pulled up to a stop sign and the driver following, jumped out and ran up to the truck cab. "Mister, I'm not

normally nosey, but I've been following you for miles and want to know why you stop every few miles and bang on that truck."

"Well, I'll tell you," the truck driver answered, "I've got a 2-ton capacity truck here and I'm carrying 4 tons of canaries, so I gotta keep 2 ton of them on the wing." —*Implement & Tractor*

★ ★ ★

The person who's ship comes in usually finds relatives at the dock.

★ ★ ★

The time to start correcting children is before they start correcting you.

★ ★ ★

About the only thing you are sure of getting by asking for it is trouble.

★ ★ ★

A man entered a small town restaurant and ordered chicken. After starting to eat, he called the waiter. "What kind of chicken is this," he asked.

"That's our best spring chicken," replied the waiter.

"I thought as much," said the diner, holding his aching jaws. "I've been chewing on one of the springs for the last five minutes." —*Hoard's Dairyman*

★ ★ ★

A proud young lady from Kentucky was trying to justify her state to a Texan.

"In Kentucky," she said, "we have Fort Knox, where enough gold is stored to build a golden fence 3 feet high completely around Texas."

"Go ahead and build it," drawled the Texan, "and if I like it I'll buy it." —*Iowa Farm Bureau Spokesman*

★ ★ ★

Nothing seems to minimize the size of fish you catch as much as witnesses.

★ ★ ★

Things to do today.

1. Get organized.
2. Talk to wife.
3. Get reorganized.
4. Talk to wife.
5. Abandon entire idea.
6. Talk to self.

—*California Farmer*

Contributions for this page are welcome. Send your "Fun On The Farm" story to Farmer's Digest, Fort Atkinson, Wisconsin.

Caring For The Sick Cow

A good cowman must do the extra things to make a cow comfortable . . .

Condensed from Guernsey Breeders' Journal

Marvin Scholl, Manning, Iowa

JUST as a human patient needs a nurse to follow out the doctor's instructions, so does a sick cow require the close watch and assistance of her caretaker.

At the first sign of illness, any sick animal should be put in a box stall free of drafts and kept well-bedded with clean straw. If the weather is inclement, it is wise to blanket the cow.

A few dollars for a wool-lined cow blanket is money that you will find well spent. The use of a blanket helps many times to avoid many preventable setbacks and sicknesses in the herd, and promotes rapid recovery in case of illness. Calving time is a period of stress. At this time there is a marked normal disturbance in the circulatory system; especially is this true in winter months. There is a sudden shock and more stress caused by the blood rushing to the uterus, lungs, and udder. If the skin of the cow is damp and cold from perspiration and surrounding drafts, this shock is intensified. Internal congestion is increased. Rub down the cow with a whisk of hay or straw, and blanket her well to keep the blood in the skin and help overcome the imbalance of circulation.

When diagnosing and treating for illness, veterinarians now take into consideration the influence of the stress factor. Stress influences the well-being of healthy individuals as well as those suffering from disease or infection. Good management practices include the elimination or correction of stress. Stress reduction can be accomplished by providing environments that favor health and well-being; by supplying adequate, well-balanced diets; by preventing injury and disease through care and sensible control programs, and by prompt treatment and comfort for injured and ailing animals. Remember that cows depend upon man for security, and this feeling of security goes far to eliminate shock and its after affects.

Reprinted by permission from Guernsey Breeders' Journal, Petersborough, New Hampshire

A well-remembered illustration incorporating all the factors just mentioned, as well as unusual but beneficial use for a blanket, would seem worth noting here. Last fall I was helping a purebred dairyman in northern Iowa get his herd ready for a dispersal. With only seven days left before the sale, the first thing to do was tie up a bunch of bred and open heifers. We discovered, even to the owner's surprise and chagrin, that a few of these animals never had a halter on before; in fact, one of them—I nicknamed her, appropriately, Spicy—was one of those very perverse

Animals that have survived an acute attack of anaplasmosis usually remain carriers of the disease for life.

creatures you run across but a few times. Spicy lay back against the halter with all her strength, choking herself, and refusing to eat or drink.

Recognizing her at once for what she was, and realizing there was no time to spare, I began working on her. First, I placed her next to the door where she could see me every time I came in and watch all I did; also, so she would be handy to receive my little attentions. Then I took an old cotton blanket from my car and put on her, this for two reasons: to make her comfortable (it was cold in the shed) and to let her know she was receiving special attention—that I preferred her to the rest, which, strangely enough, I did.

For two days and nights she braced herself against the halter and actually made herself sick before she finally came around. (I think she held out longer than any heifer I knew.) By then the blanket served her well, indeed. At first when the owner saw the blanket lying loosely across the heifer's back, he didn't say anything but looked askance at the deal. Afterwards he admitted that he fully expected to see the blanket lying in a pile of manure the very next morning. And when I told him that Spicy would lead in the ring as well as any of the rest, he really smiled up his sleeve. But I knew how often the most obstinate animals happen to be the ones that respond quickest to personal attention.

I must admit I was a little surprised myself on the second morning to find the blanket still on the heifer. With a bit of adjusting whenever I came into the shed—and a few words and pats at the same time— the blanket never once completely slipped off the heifer. From the start, Spicy was offered feed and water before any of the rest. After a couple of days

she started to eat and I was relieved, especially when her bowel movements gradually appeared normal. Before long she started bawling, calf-like, for f a v o r s when ever I came into the building—and, you guessed it, she led like a regular trooper when sale day came.

With every sick animal it is important to tease her appetite. Before he feeds his cows grain, a good cowman sweeps the mangers clean and often picks up metals and wire that may be left from a previous feeding. In fact, he has developed a sort of sixth sense in recognizing the presence and danger of foreign objects. He takes away any feed the cow refuses to eat after half an hour or so. This he does whether the animal is sick or not.

The saliva of animals infected with rabies contains the virus of the disease. Danger in handling rabid animals is great as a small break in the skin can permit the disease to enter one's system.

A clean manger is one of the signs of a good feeder and cow nurse. He expects a cow to "wash her own dishs" and experiences a real thrill when she licks her manger until it's wet and then stretches for more. He knows exactly how much she will clean up with relish in a certain amount of time. Little wonder he notices instantly when a cow eats her grain just the least bit slowly or disinterestedly, and he is worried. He remembers this when he feeds her the next time—in fact, it is on his mind all day—and he gives her less. He is relieved when she comes into the barn for the next feeding with her old gnawing appetite back. A crisis has been averted.

I have observed cows with severe cases of ketosis brought out of this condition over a period of time by the feeder's careful manner of wheedling her appetite, without any therapeutic measures. So long as a cow is kept eating, she will work herself out of this condition. Dextrose injections, together with wise feeding practices, will hurry the process of recovery. If it is grazing season, there is nothing better than grass for animals suffering with ketosis.

A good caretaker must be willing to do the extra little things that make a cow more comfortable and contented. He will have a reasonably quiet and usually steady temperament. He is patient, loves cows, and understands what a cow wants when she wants it, and gives it to her. He lives with his cows, studies their whims as well as their needs, and spares no effort to cater to them.

A sick cow must be brought

back to her feed slowly. Feed often small amounts of the highest quality hay available. Vary the kind of hay fed. If it is very cold, warm her drinking water, but only enough to take the chill off. Most cows, with the possible exception of fresh animals, object to water that is very warm.

The experienced eye of an observant and interested dairyman instantly detects a sick animal. He is ever on the alert against such things as seasonal changes in feed and weather, overeating (especially of spoiled feeds), stress factors, eating of fetal membranes after calving, etc.—all of which are causes of indigestion.

No dairyman should attempt to diagnose a case before taking a cow's temperature. There are

The first essential of profitable dairying is a good herdsman.

many symptoms that indicate trouble ahead: a dull, listless eye, a slower gait than usual, hair standing on end, and refusal to clean up feed. The intuition of the herdsman is the best guide. He may not be able to tell you exactly why he thinks an animal is sick, but working with her as he does, he can usually spot trouble even before it makes its appearance.

It is a simple procedure to take an animal's temperature, and yet almost everyone who has ever used a clinical thermometer has experienced some difficulty in reading it. After some practice, though, this difficulty is overcome. The approximate body temperature of a normal cow is 102 degrees. A slight variation either way need not necessarily cause alarm since certain conditions such as weather, nervous excitement, calving, etc., sometimes cause a variation in temperature.

A cow's bowel movements, especially at the first sign of illness, should be carefully observed. If the cow has no temperature and no indication of ketosis (as the result of tests made), she is probably off feed, almost certainly if there is little bowel movement. A laxative is then indicated.

It is the ability of a herdsman to recognize when the service of a veterinarian is r e q u i r e d that marks him as a master of his craft. Take no chance where infections are indicated by an extremely high temperature. Eliminate at once by examination the possibility of an infected quarter of the udder.

Don't wait until your cow is nearly dead before calling a vet. Don't treat her indiscriminately. Tell him everything you've done for her—and to her—and carry

out his suggestions. This follow-up method is just as important in effecting rapid recovery as the vet's visit and diagnosis and, in many cases, more so. Work hand-in-hand with your local veterinarian. Sometimes a phone call will be all that is required. He will confirm or alter your diagnosis and suggest amounts and kinds of the various drugs to use. If he is a busy man, he will appreciate your doing some of these things to save him a trip. Confide in your vet; trust him. He can be of inestimable value to you and to your herd.

One percent of dairy calves born are twins, and only two-thousandths of one-percent are triplets, say experts. The tendency towards twins is believed to be inherited through the cow.

Because there are a great number of herds handled under the conventional loose-housing and milking parlor system, it would not be amiss to say a word in regard to this setup. I have observed many times that there is no place for treating sick animals. It is an absolute necessity that some enclosed room be provided for handling sick and ailing dairy cows. If some system of heating this room is provided, so much the better. Such a provision would not only seem wise from a dollars-and-cents angle, but convenient and humane as well.

In regard to mastitis, one of the dairyman's most insidious plagues, it is apparent that the miracle drugs and antibiotics have not been very successful against it. In a way, their widespread use has been responsible for the lethargy that has crept into our fight against mastitis. We have been led to believe these so-called wonder drugs are the panacea for the whole problem. What we sometimes fail to realize is the fact that udder infusions are worthless without proper control and preventive measures. An environment wherein management provides the kind of care and comfort we have been discussing, would do more for the elimination of mastitis than any other single factor.

As a matter of fact, the incidence of mastitis in a herd may be just as great after the elimination of streptococcus agalactiae (the most common type of bacteria causing mastitis) as when it was present. Their leaving seems to open the way for other kinds. The question then naturally arises as to why all cows that have about them bacteria that can produce the disease do not have mastitis. The answer takes us to one of the fundamentals I shall try to bring out—that in-

volving resistance to infection. This is a subject all by itself, but one of its basic principles is simple and of the greatest importance to the control of the disease. This principle is that the first line of defense against infection is the unbroken epithelium, the skin lining the mouth, lungs, gastro-intestinal tract, and the inside lining of the teat and udder. Anything that causes this lining to b r e a k—injuries resulting from poor milking being one of the chief offenders—is an open invitation to infection.

Perhaps it is well that the government is cracking down on the use of antibiotics in milk, for it will force us to adopt a saner policy of mastitis prevention and treatment.

For ticks on dogs, dust with 4 per cent malathion, 10 per cent DDT, or 1 per cent lindane.

We now know the udder is the world's most prodigious factory of antibodies, capable possibly of immunizing human beings, at least temporarily, against an almost infinite variety of infectious diseases. We discount entirely the possibility and powers within the udder itself to cope with the malignant bacteria within it. Nature is capable of wonderful things if left to herself—even more when she is assisted.

Fungus infections occasionally are found in quarters that have been treated for mastitis. It is believed the fungus is carried up through the teat canal in the process of infusing the quarter. There is no known treatment for this condition.

Frequent and indiscriminate use of drugs and antibiotics has sometimes caused immunity in the animal to that drug; later, when such a drug is advisable and specific in the treatment of a more complicated and dangerous disease, it has no effect at all. At times, even, the animal may become allergic to a certain drug, is shocked, and dies.

While we are on the subject of indiscriminate use of udder infusions, stress factors, etc., it is well to reflect on the sound principle that too much medicine and doctoring sometimes defeats its own purpose. There are times when it is best to let nature alone. I know at least three specific instances where this was the case. Let me cite one of these.

Last summer I was drafted to attend a very valuable dairy cow during calving. Having worked with this particular animal before, I understood her peculiar make-up. Despite her great size and apparent ruggedness, this cow had of late years experienced singular

difficulties at calving time. Another fact I knew about her: though tractable enough, she had an intense dislike for the veterinarian; and she was allergic to many drugs, including cortisone and penicillin.

Again she calved with the usual amount of trouble: milk fever, retained afterbirth, and ketosis. She received specific treatment for each, but because of her aversion for the vet, I asked him to stop by just once each day to check her. She retained her appetite, except for the two occasions when she was down with milk fever. After a week passed, however, she still showed just as strong a reaction to ketosis as she had before treatment began, and her temperature continued to rise despite everything the vet administered that he thought might break it. It was felt, quite reasonably, that the treatment for ketosis would not be effective until the infection was checked and the temperature broken; in fact, the infection was no doubt contributing to the strong reaction to the urine test. Finally, in desperation, when the temperature was 106 degrees and he had exhausted his knowledge and use of the various drugs, the vet turned to me inquiringly. Having had ample time to review the facts in my own mind, I was beginning to suspicion the truth. "Let's not do anything at all with her tonight and wait till morning," I said.

Before white men came to North America, forests covered almost half of the area, or about 825 million acres.

The vet left. Believe it or not, next morning the cow's temperature was down to normal, the first time since calving. From that time on the vet stopped coming and every therapeutic treatment ceased. She showed a positive reaction to the urine test for some time, but her temperature remained normal for the rest of the two weeks I took care of her. She recovered completely without further treatment.

Health records are a vital part of any herd health program. A separate card should be kept for each cow, on which are entered heat periods, breeding and calving dates, veterinary treatments, etc. Thus an owner has readily available each individual's health history. (Heat period data is important in two ways: you know in advance when an animal should come in heat so you can watch for her, and you can detect any irregularity in the heat cycle before any breeding trouble becomes deep-seated.) Such case histories are important not only for the present in making accur-

ate diagnosis easier and permit prompt and proper treatment, but they can and should be considered in selecting families for her replacement that are resistant to diseases. Some cow families seem never to be sick.

The question is often asked, "What medicines and equipment should a dairyman keep on hand?" My own answer to this would be: Keep a minimum of medicines in your bottles: most medicines lose their potency with age. Do not overstock. Quoting a well-known lecturer: "Show me the herdsman with the largest assortment of drugs in his cabinet and I'll guarantee his will be the herd with the most ailments."

Few things improve a person's driving like a police car just ahead or behind.

The following list of medicines is merely suggestive: laxative of choice (given in time, a laxative will save many a vet bill and keep a cow in production), calomine lotion (for cow pox), medicated petroleum jelly (for sores and keeping teats soft), antiseptic teat dilators, tincture of iodine, calf scour medicine, medicated alcohol, bloat medicine, absorbent cotton, gauze dressing, tape and bandages, carbolic salve, calf-dehorning paste or stick, dusting powder (for lice), medicaments for mastitis, a good disinfectant, soap, towels, hoof rot treatment, etc.

Supplies for medicine cabinet: clinical thermometer, trocar and cannula, bull rings, rubber drenching bottle, balling guns (large and small sizes), 8-quart pail, pair of curved scissors, wood bit for bloat, hypodermic set, etc.

Larger equipment needed: at least one good strong rope halter, a couple of good blankets, good nose lead and rope, curry combs and brushes, good electric clippers and extra set of blades (kept sharp), hoof knives and nippers, calf delivery outfit, etc.

Here, too, is a short list of *musts* for herd health and comfort that might well be tacked up in the barn where they can be seen every day: Do not allow an animal's feet to become long and curved, watch ventilation, watch adjustment of electric cow trainers—if you must have them, check water bowls to see if they are clean and working, and keep animals free of lice, itch, and ringworm. Lice on cattle are very common and can be found in almost any herd. That healthy, well-nourished cattle seldom get lousy is a fallacy.

Grass, shade, water, freedom from flies are nature's best medicines for a sick cow in summer.

Much is heard of late in regard

to feed additives, minerals, and vitamins. The USDA Research Service says: The needs of the dairy cow for feed additives, minerals are relatively simple. This is due to the fact that the dairy cow today still subsists largely on natural feed sources, that is, forages which supply many of the vitamins and minerals necessary to good health, reproduction, and lactation. Likewise, the dairy cow is unique in that she has a rumen containing large numbers of bacteria which rebuild feed nutrients and synthesize many of the vitamins. The only minerals that are

Women who are outspoken, seldom are.

generally necessary to add to the rations of dairy cattle are phosphorous and common salt. In some deficient areas, iodine, copper, cobalt, and iron are needed. The only two vitamins which we know that are required in the feed supply by the dairy cow are Vitamins A and D. These are furnished in ample supply by good quality forages fed the mature animal. The antibiotic, aureomycin, is not recommended in the ration of mature dairy cows. Neither is the feeding of stilbestrol and thyroprotein. The use of sodium propionate, or a combination of calcium and sodium lactate salts, are moderately effective in preventing ketosis in dairy cattle. The addition of Vitamin D is also effective in the prevention of milk fever. The addition of sprouted grains or various rumen bacterial factors is not justified.

In summary, let us say that a good caretaker is there when a sick cow needs him; he is willing to place the cow's comfort and needs before his own. Never allow a sick animal to remain outside in bad weather, even when she's recuperating. On the other hand, do not force her to stand in a stanchion day after day with very little bedding under her. If she can't be kept in a box stall, turn her out for a few minutes each day for exercise. An indisposed animal will recover much more rapidly when she can move about at will in warm quarters. It is surprising how quickly a sick animal will respond to an environment of comfort and loving care.

Assume the attitude that if you can't afford to keep a cow comfortable, you can't afford cows. Keep plenty of bedding under your cows, especially their udders. Bedding is never wasted. The last thing a watchful herdsman does before going to bed at night is to "tuck" the bedding under his cows. His sleep may be of short duration more often than not, but it is an immensely restful, satisfying sleep.

Humus

A scholarly discussion of humus and its growing importance to soils . . .

Condensed from le Progres Agricole de France

Translated by *Herbert Steiner*

HUMUS, the product of living matter, constitutes a reserve and a stabilizer of organic life on earth. It has been the subject of much discussion by both researchers and practical farmers. Its reputation has been more or less obscured by the coming of chemical fertilizers, but after some poor results when the value of humus was ignored, its importance is again being recognized.

Research has been pushed in different directions to try to define the nature of humus and the details of its formation. We do not wish to pretend to settle this complex question, but merely to give a general view of this substance which is a key factor in the fertility of soils and their productivity.

Fresh plant debris (stubble, vines, roots, stalks, and leaves) furnishes a certain quantity of organic matter which when buried in the soil will undergo chemical changes due to the action of soil microorganisms. We reserve the name "humus" for a first product of this change which is more resistant to further decomposition than the original organic matter. This product however is not stable but undergoes further and much slower destruction.

Humus is richer in nitrogen than the organic matter which gave it birth. It is colloidal in character, and so complex that it is not well understood yet. There are several distinct types of humus which differ according to the type of organic matter from which they were derived. Certain of the constituents form a colloidal complex with clay, which is essential for the maintenance of the structure of soils and the dynamics of the fertilizing elements.

Let us see what the principal properties are.

1. The Role of Humus

As we have just indicated humus affects soil structure by modifying its physical structure, but it

Reprinted by permission from
Le Progres Agricole de France, 38-40 Rue des Jacobins, Amiens, France

also influences chemical properties.

a. Action on physical properties.

Humus forms a kind of cement between the sand particles of soil. This encourages the formation of aggregates which give soils their structure. It also helps reduce the tightness of clays. It improves worn out soils by giving them a new structure and lightens heavy soils.

It is much easier to work soils which have enough humus, because tillage implements scour better. Water-holding capacity of a soil is increased by the presence of humus. A relatively small addition of humus often causes an important increase in water holding ability. Humus, with its dark color, can affect the heat-absorbing properties of soil. The black absorbs more of the sun's heat and the soil warms up faster.

A trend toward pipeline milkers, parlor-type installations, and bulk tanks emphasizes the need for good-quality water on the dairy farm.

For playing its physical role, it is necessary that the humus be well-distributed through the plow layer. Uniform distribution of humus can only be obtained by bringing sufficient organic matter to the soil, and distributing it well throughout the plow layer.

b. Action on the chemical properties of the soil. Humus together with clay helps fix certain mineral elements which would otherwise move deeper (carried by rainwater) and be lost to plants. The presence of humus contributes strongly to diminish the importance of complex phosphates of iron and aluminum which cannot be assimilated and which form in soils which are too heavy and too acid. Humus increases the ability considerably to assimilate potassium and phosphoric acid.

While decomposing slowly, humus liberates ammonia which transforms into nitrates utilizable by the plants. Thus it is a direct source of nitrogen. It is estimated that under average conditions 70 to 140 pounds of nitrogen are furnished annually per acre.

Finally humus seems to have a special action for encouraging the growth of vegetables. In this case the causes have not been definitely found.

2. Average content of Humus in Soils

In the soils of northern France, the humus content varies from one to three per cent. It is estimated that a humus content of two per cent will give good soil structure. When it is below one per cent it is too small to assure good soil structure.

3. Destruction of the Humus

Humus decomposes s l o w l y through action by the soil bacteria. Part of the nitrogen liberated forms the living matter of the bodies of these bacteria. Thus the nitrogen is fixed and stored by these living organisms and liberated when they die. In this way it is not as easily lost by drainage. The average speed of decomposition of humus is only from one to two per cent per year. When the humus content of the soil is low the losses are low. If one begins with a soil rich in humus the losses of humus will also be much of destruction of the humus. The higher over the years.

Many factors modify the speed of destruction of the humus. The conditions of the soil (structure and pH) and the climate can either slow down or speed up the decomposition. Different types of humus appear to be more or less affected by the bacteria. Humus will decompose much faster in a soil which has been worked than in a soil little worked. Decomposition will be very slow in a cold heavy clay soil with little air. On the other hand a dry well-drained soil will lose less humus than a damp, but also well-aerated one.

In alkaline soils, humus is often protected from bacterial action by a coating of chalk which forms on the grains. In these soils humus decomposition is furthered by dissolution of this lime by acid fertilizers. In acid soils on the contrary, bacteria do not live well, and their activity will increase only with the addition of lime.

The losses of humus from a normal cultivated soil are from a third to three quarters of a ton per acre per year. If this loss without restitution is slow to show, it is nevertheless inevitable unless organic matter is added. It is absolutely necessary to maintain in our soils a quantity of humus sufficient to guarantee a good structure. The formation of humus is slow. It is necessary, therefore, to assure a regular maintenance of its level, but it is not necessary to add too much, because its destruction is proportional to its amount.

New Swine Breed For U. S.

NEWEST SWINE BREED GROUP in the country is the National Belted Essex Assn., incorporated by a group of Sampson County, N. C. swine producers with veterinarian Dr. W. C. Aglesby of Clinton as president. First hogs of the breed arrived from Scotland in mid-October. The breed is said to be noted for its hardiness and for mothering and foraging ability. —*Farm and Ranch*

Crooked Calf Disease

Researchers suspect lupine plants and lead as the search narrows down.

Condensed from Agricultural Research

THE cause of crooked calf disease—a congenital deformity of newly born calves resulting in twisted, deformed legs—has been narrowed down to two elements in south-central Idaho studies.

USDA scientists were able for the first time to experimentally produce a typical crooked-leg calf under controlled conditions by feeding small daily amounts of lead for 120 days along with the lupine plants normally grazed. Further studies are underway to determine if the causative factor is lupine or lead, or perhaps a combination of both.

These studies are being conducted by veterinarian Wayne Binns and biochemist L. F. James at Logan, Utah, in cooperation with the Utah Agricultural Experiment Station and a nutritionist, K. C. Beeson, of the U.S. Plant, Soil, and Nutrition Laboratory, Ithaca, N.Y.

The deformity, which occurs primarily in offspring of cattle grazing certain alpine ranges in south-central Idaho, affects mostly the legs and spine. It varies from slight bowing to marked and persistent flexing and twisting of one or both front legs. A stiff neck and curvature of the spine may or may not be present.

Although the disease occurs among the Hereford beef cattle predominant in the area, it also occurs in dairy breeds grazing on the summer ranges along with the beef animals.

The deformity has also been reported in Montana, Washington, Oregon, Nevada, California, Australia, Canada, and South Africa. Livestockmen at first thought the deformity was caused by a hereditary factor. But as more accurate breeding records were kept, it soon became obvious that heredity wasn't to blame.

Studies of suspected range areas have been underway since 1955 to see if the malformation is caused by a nutritional deficiency or by ingestion of a toxic substance. Scientists wanted to know, too, when the damage or "insult" to the fetus occurred.

Soil Has High Mineral Content

There were no marked mineral

Reprinted from Agricultural Research, Agricultural Research Service, United States Department of Agriculture, Washington 25, D. C.

deficiencies in the area. Examination of water samples showed none of the generally recognized toxic elements. But the area is highly mineralized and has been extensively mined. So the scientists decided to test the effects of certain minerals the animals might have gotten from small grazing areas that could have been missed in random plant samplings. Lead was selected as the first mineral to be fed because of its possible effect on phosphorus metabolism.

Excessive Antibiotics in Hog Rations Can Be Costly

Hog producers who depend on antibiotics as their sole method of controlling diseases will find their feed costs soaring.

Univerity of Illinois livestock specialist, G. R. Carlisle, emphasizes that antibiotics should back-stop good sanitation and disease practices. They should not serve as a substitute. Why?

First, antibiotics cannot completely check diseases. Second, if extremely high levels of antibiotics are needed to control diseases, feed costs jump.

To illustrate this point, Carlisle cites experiences of two producers: The first one follows good management practices. Therefore he gets good performance from his hogs by using only 10 to 20 grams of antibiotic in a ton of feed. At 10 cents a gram, the antibiotic costs up to $2.00.

The other producer relies entirely on antibiotics and must use about 100 grams in each ton of feed to control disease. The cost is about $10 per ton of feed.

The moral is: Antibiotics certainly have a place in swine rations. But depending on them as the only method for stopping diseases can be costly. *—University of Illinois*

DRENCHING PREGNANT EWES with phenothiazine for worm control is not recommended due to the possibility of abortion. This could result from rough handling of the ewes or from toxic effects from the worming solution. It is much better to adopt a program which calls for drenching just before winter confinement, 10 days before breeding and 10 days before turning the ewes on pasture in the spring. *—Farm Credit News*

Solve Farm Problems In Six Steps

Follow a system. It pays . . .

Condensed from
Wisconsin Agriculturist

ALL farms have their share of problems but they can be solved if this kind of a step-by-step program is followed.

In 1956 Joe Planner (assumed name but a real situation) bought 200 acres of land, half tillable, in an Illinois county. He is farming this acreage along with 120 acres of rented land. The plan he developed for this farm follows these six basic steps for solving problems:

1. Find the problem. Joe joined a farm management group in 1957. The summary of the first year's records interpreted by the fieldman helped Joe find his problem. It was low income due to low crop yields, low livestock volume, and no organized plan for farm production.

His corn yields were 35 bushels per acre, soybeans 14, and wheat 13. The soil was mostly claypan soil with a low soil productivity rating. Wet weather on top of very low fertility contributed to these low yields. Returns from seven dairy cows were good, but returns from 12 sows were poor because of swine disease.

2. Gather information. Joe assembled all the facts he could get on applying fertilizers and raising different kinds of livestock. He was most interested in what it would cost to change his farm plan.

He explored various sources of credit. He even got some experience in feeding cattle and feeder pigs by entering a one-year livestock feeding agreement in 1958 with his father, who lived in the community.

3. Adapt the information to the problem. The farm adviser gave Joe fertilizer recommendations based on soil tests. The farm management association fieldman gave him information on what returns he could expect from crops and various livestock enterprises.

Because of Joe's short capital position, the fieldman suggested

Reprinted by permission from Wisconsin Agriculturist, Racine, Wisconsin

fertilizers that would give the quickest return at the least cost. Joe's records were a great help in determining the labor and capital requirements of the livestock.

4. Decide. Joe weighed his alternatives and made a decision based on the facts he had assembled. The Federal Land Bank would finance capital improvements, while the Production Credit Association would furnish operating capital.

It was easier to solve the problem of crop yields than livestock volume. He and his wife decided that they should expand their dairy herd to 30 cows. Records showed that this enterprise had been the most profitable for them. They could meet the goal they had set for themselves and their four youngsters within the labor and capital supply they had available to them.

They liked dairying. As soon as funds would permit better facilities, they would add a hog enterprise.

5. Act. Joe acted on his decision. He has treated his soil according to test recommendations. He used annual fertilizers to supplement a build-up program according to available funds. In 1958 he built a silo and an addition to the barn. In 1959 he added an addition to the barn. In 1959 he added a four-stall milking parlor, pipeline milker, and bulk tank.

To keep up his cash supply, Joe has kept 95 percent of his tillable land in corn, soybeans, and wheat since 1957. He has bought some of his hay. As his dairy herd increases, he plans to use more corn silage and grow more hay if he cannot buy the hay.

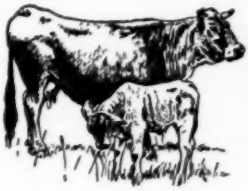
6. Study the consequences. Results of Joe's efforts to solve his problem can be seen from figures taken from his records (see table at end of article). He is moving as rapidly as he can toward his goal for good living. He plans to build a new farm home in the near future if his capacity to repay permits.

HERE'S WHAT GOOD PLANNING DID

	1957	1958	1959
Corn yield, bushels per acre	35	46	85
Soybean yield, bushels per acre	14	19	31
Wheat yield, bushels per acre	13	26	47
Gross crop value per tillable acre	32	49	70
Number of dairy cows	7	16	17
Months of labor used	13	16	19
Labor and management earnings	$1,750	$7,400*	$4,300

*Includes one-year income from cattle and hog feeding operation with father.

Beat Mastitis Without Medication



Extension workers in Vermont say farmers can eliminate 90% of mastitis troubles in their herds — and do it without drugs. Here's the "prescription" . . .

Condensed from Butter-Fat

W. A. Dodge

A MAJOR share of the mastitis problems on dairy farms can be eliminated by following these steps:

1. WASH teats and lower udder with a warm cleaner-sanitizer solution, using individual paper towels, cloths, or sponges.

Because of their stability, quarternary ammonium or iodine compounds are the best. Iodine compounds have the additional advantage of a built-in indicator (yellowish color). Be sure to use them at the strengths recommended on the container. Two quarts of solution is all you need. If you use cloths or sponges, make a fresh solution for every six cows, or when it's dirty. If you use individual paper towels, make a fresh solution when the old one gets cool. Use a clean pail.

A good dry-hand wipe-off is better than a dirty wash job.

2. DRAW two full streams from each teat into a strip cup and look for signs of mastitis. Discard all of the milk from infected quarters.

3. PLACE straps or surcingles (if you use them) on the cow's back.

4. ATTACH teat cups gently and squarely to the udder within one minute of these first three steps. Be sure the milker is adjusted so that teat cups can't creep up and get a choke hold. They should hang straight down from the udder.

5. MACHINE STRIP as soon as the udder is collapsed (two to four minutes). Do this by gently pulling straight down on the teat cups and massaging with a gentle downward motion on bottom of each quarter.

6. REMOVE teat cups gently. Shut off the vacuum and press your thumb between one liner and teat. This breaks the vacuum

Reprinted by permission from Butter-Fat, 425 8th Avenue West, Vancouver 10, B. C., Canada

seal and the cups will slide off. Then open the petcock for a second to draw off, into the pail, any milk left in the tubes.

7. HAND CHECK immediately. Briefly massage each teat and if any milk remains, remove by hand. Do this promptly and then leave alone.

Remember, each cow is an individual. Treat her as such. A light-weight strap-on stool will lighten your milking chores.

Let Hormones Work

1. One minute after a cow is stimulated, pressure builds up in her udder (she aches to get rid of her milk).

2. This pressure lasts about five minutes.

3. It tapers off to zero in seven minutes.

4. After seven minutes you really have to work to get any milk.

A cow must be stimulated to release her milk. You can do this by:

Quiet, peaceful atmosphere

Regular milking time

Placing a surcingle (if used) on the cow's back

Placing the milking machine beside the cow

Washing teats and lower udder or just massaging

Starting the cow's milk.

Stimulation releases a hormone (oxytocin) that is secreted by the pituitary gland in the skull. This hormone causes a squeezing of the milk cells, thus forcing the milk out into the ducts.

It's important at milking time (both morning and night) to perform these acts of stimulation in rapid sequence. Then attach the teat cups within one minute of stimulation.

Milking Machine Musts

Follow a good milking routine as part of your battle to prevent mastitis. Keep machines in good operating condition if you expect to win. You must have a steady vacuum all the way from the pump to the end of the vacuum line, and to the teat cups, through the farthest petcock. Be sure you have the inches of vacuum recommended by the milking machine manufacturer. Dirt, grease, and dried deposits can plug your vacuum lines.

The cemetery is a place where lots of careless drivers stop.

You Should:

1. Use pipe at least one inch in diameter.

2. Clean the pipe and petcocks at least once a month. You can do this by drawing a cupful of 2% lye solution into each petcock, beginning with the petcock nearest the pump. DO NOT OVERFLOW sediment tank. Immediately after drawing solution

into farthest petcock, open petcock nearest pump and shut off motor. Allow to stand two hours. Rinse by following same procedure, using clean warm water.

3. Clean stanchion hoses daily with burr or brush. Hang full length to dry.

4. Clean pulsators once a month (except DeLaval Magnetic). Set speed at rate recommended by manufacturer.

5. Clean vacuum regulator once a month.

6. Turn teat cup liners wrong side out once a week and examine them. Throw away any that have become rough or wrinkled. If you're having vacuum, pulsator, or liner trouble, study and follow the check sheet.

Lye Solutions

To make a 10% stock solution, dissolve one can of lye in one gallon of water. For a 2% solution, add two lye cans of the stock solution to one gallon of water. For an 0.5% (½%) solution, add one-half can of the stock solution to one gallon of water.

Respiratory Infection Increasing in Cattle, Says Veterinarian

The incidence of respiratory infections in cattle is increasing, Extension Veterinarian John B. Herrick reported recently at Iowa State University.

He suggested that all feeder cattle shipped into Iowa feedlots be vaccinated against Red Nose—bovine rhinotracheitis—as well as leptospirosis. Shipping fever, he added, is no longer the only disease that needs to concern feeder cattle buyers.

And, Herrick added, feedlot observations indicate that cattle vaccinated for infectious bovine rhinotracheitis are less apt to have shipping fever and other respiratory infections. However, it doesn't protect cattle against all respiratory infections. Flu-like illness has been observed in several herds this past summer.

Medication in the feedlot is not fully satisfactory for controlling these diseases, Herrick said. In many cases the sick cattle are not able to eat or drink. Even when they eat, he added, the medication often has no curative effect for the particular disease affecting the animal.

—Iowa State University

Tranquilizers

A helpful "tool" for handling animals if used correctly . . .

Condensed from The Ohio Farmer

Albert A. Gabel, D.V.M.

TRANQUILIZERS have been widely publicized as making examination and treatment of all kinds of animals easier and safer.

Tranquilizers help allay fear, which is expressed as shyness, depression, nervousness or viciousness. Tranquilizers help prevent loss and injury to livestock during shipment. They also make anesthesia and surgery on some animals safer.

The use of tranquilizers, often called "chemical restraint," has increased rapidly since they were first introduced into veterinary medicine in 1956. Tranquilizers calm most animals and relax their tensions, but usually allow them to live nearly normally, if the correct dose of a suitable drug is given. The animals have an alert awareness of, but apparent indifference to, unusual surroundings or happenings.

Tranquilizers affect different areas of the brain than sedatives and anesthetics. In addition to changing animals' temperaments, the drugs often lower blood pressure and body temperature, depress the ability of the animal to vomit and cause other side effects. Tranquilizers have been called the "jacks of all trades, but masters of few". They have many effects, but often the desired effect can be accomplished more efficiently by another more specific drug. Even their "tranquilizing effect" is not always reliable.

Drugs occasionally cause excitement rather than depression in individual animals, especially horses. Also, response to a certain dose varies between individual animals even if their weight, age and condition are similar. Only after considerable experience can one use these drugs safely and to greatest advantage. Fortunately, laws have kept the use of these drugs under the responsibility of veterinarians by permitting them to be dispensed on prescription only.

Stress causes an estimated loss of $250,000,000 to the livestock industry each year. Much of the loss in cattle is due to deaths, in-

Reprinted by permission from The Ohio Farmer, 1010 Rockwell Avenue, Cleveland 14, Ohio

juries and weight loss during shipment to feedlots. Tranquilizers also prevent the effect of stress at weaning time. It has been proven that tranquilized weanlings are less anxious, do less fence walking, eat better sooner, and gain weight faster than untreated weanlings.

The air shipment of horses is often made safer by tranquilizers. If horses are not tranquilized or sedated, occasionally they go berserk while in flight and have to be destroyed to prevent damage to the planes.

The hysteria which sometimes develops in animals during, or following birth of their young is being successfully treated with tranquilizers. These drugs calm the mothers so they will nurse their offspring and they suppress the cannibalistic tendencies which often occur in sows and bitches.

The restraint of zoo animals for medical or surgical treatment requires skill, steady nerves and much patience. The tranquilizer gun which makes this job easier resembles a rifle, but is powered by a compressed gas. This 50-caliber rifle fires a projectile which is a small syringe with a hypodermic needle at the front. The impact of hitting an animal causes a gas to be liberated which pushes the plunger of the syringe to inject the drug. The gun has an effective range of 50 yards. A pistol version of the gun is also available.

Tranquilizers are very useful in dogs, perhaps because they have more "personality" than most animals. Fear of storms or gun-shyness can frequently be relieved.

Tranquilizers often prevent the fretting which some dogs do when they are separated from their masters. I know of a case in which a dog became vicious following the death of his mistress. He was permanently cured by a short treatment with tranquilizers. These drugs often prevent car sickness and vomiting.

Many surgical procedures can be done using these drugs along with local anesthetic injection at the area of the operation. If the animals must be put to sleep for surgery, tranquilizers may help make the recoveries quiet and free from struggling. These drugs are also useful in keeping animals from biting or scratching at bandages and sutures following surgery.

If you do a good job raising your own dairy herd replacements, says Robert Fincham of Iowa State University, they should be ready to breed at 15 months of age and come into milk production when they are 2 years old.

Although tranquilizers are valuable new drugs, they have not eliminated the older sedative drugs from the practice of veterinary medicine. In many cases tranquilizers do relieve a great deal of anxiety and suffering in animals. They augment, but never replace kindness and gentle treatment.

High Temperatures Improve Cotton Quality

Cotton fiber strength—and consequently its spinning quality—is improved when the temperatures at which bolls mature are kept high as a result of infrequent irrigation or wide spacing between plants and rows, a U.S. Department of Agriculture scientist reports.

Experiments indicate that high boll temperatures late in the growing season result in cotton fiber of greater strength without affecting fiber thickness, length or yield. On the other hand, fiber strength was reduced when air around the bolls was cooled by evaporation of water from the soil or because of heavy shade from closely-placed plants.

Irrigation experiments showed that cotton plants receiving slightly restricted amounts of water during the growing season produced higher quality fiber than plants receiving optimum amounts of water. Boll temperatures in plots receiving infrequent irrigation were 7 to 8 degrees higher than in frequently irrigated plots. Restricted water reduced the leaf area of cotton plants so that the bolls received more direct heat from the sun. *North Carolina State College*

THE CONSERVATION RESERVE has idled approximately 28 million acres this year or 6 per cent of the nation's cropland. The original purpose of the soil bank program was to reduce surplus farm commodities by temporarily retiring farmland from production and, incidentally, to promote conservation. In practice, a large proportion of the land idled by the program has been land of low productivity.

Those states with the largest proportions of cropland in the conservation reserve are: New Mexico, with 35 per cent; the Great Plains states (except Kansas and Nebraska), with 9 to 10 per cent; and Utah, Colorado, Georgia, South Carolina and Maine, with over 10 per cent. *—Federal Reserve Bank of Chicago*

A THOUGHT A DAY

TO KEEP THE PSYCHOANALYST AWAY

From the Collection of Everett Smith

Thank the Lord that there are two things money can't buy — an easy conscience and the wag of a dog's tail.

★ ★ ★

You cannot afford to be half way in anything. The wholehearted man is the one who succeeds.

★ ★ ★

A wise man never blows his knows.

★ ★ ★

A man's treatment of money is the most decisive test of his character — how he makes it and how he spends it.

★ ★ ★

In matters which he does not understand, the wise man reserves his judgment.

★ ★ ★

Well done is better than well said.

★ ★ ★

When one stops learning, he stops living.

★ ★ ★

A woman's declining years are before 30. She seldom declines later.

It's not too hard to live on a small income if you don't spend too much trying to keep it a secret.

★ ★ ★

If you are too busy to pray, you are too busy.

★ ★ ★

Unless the free are brave, they will no longer be free.

★ ★ ★

There were just as many careless drivers 30 years ago, but horses had more sense.

★ ★ ★

In women, courage and a majority of other good qualities are more highly developed than in men. *Arthur Brisbane*

★ ★ ★

A college education is one of the few things a person is willing to pay for and not get.

★ ★ ★

The great use for a life is to spend it for something that outlasts it.

★ ★ ★

Child psychology is what parents use to let their children have their own way.

When a girl becomes playful, she probably means business.

★ ★ ★

You can learn many things from children. How much patience you have, for instance.

★ ★ ★

A dreamer is one who spends most of her life looking for an impossible man and then discovers they all are.

★ ★ ★

Some juvenile delinquents are simply children with mature ideas.

★ ★ ★

When a woman doesn't know which way to turn, she's probably driving.

★ ★ ★

A woman worries about the future until she gets a husband. A man never worries about the future until he gets a wife.

★ ★ ★

Most married men who speak from experience agree with their wives.

★ ★ ★

No wonder women outlive men. They don't have to cope with wives.

★ ★ ★

Parking places aren't really hard to find. Look how many people find them before you do.

★ ★ ★

When a man thinks he is important, he should ask what the world would miss if he were gone.

Be sure your brain is in gear before putting your tongue into action.

★ ★ ★

The highest of distinctions is service to others. *King George VI*

★ ★ ★

Only those who have the patience to do simple things perfectly, ever acquire the skill to do difficult things easily.

★ ★ ★

In a little while, today will seem a long time ago.

★ ★ ★

The man who observes vigilantly, and resolves steadfastly, grows unconsciously into genius.

★ ★ ★

Pleasant memories must be arranged in advance.

★ ★ ★

Maybe the reason older people are quiet is because they have more to be quiet about.

★ ★ ★

Knowledge comes, but wisdom lingers.

★ ★ ★

Silence is the only substitute for brains.

★ ★ ★

The preventive for nosebleed is keeping it out of other people's business.

★ ★ ★

One should allow everyone three faults. If we make that allowance, we find the rest surprisingly nice.

He Saves The Soil

This farmer tells how he converted an eroded, depleted farm into an agricultural showcase . . .

Condensed from
Humble Farm Family

"THERE'S no difference between good farming and good conservation. You can't practice one without the other."

Carl Hicks, a friendly farmer in blue overalls, spoke with conviction. Looking out over his 249-acre Fairview Farms north of Conroe, Texas, you also could see that he spoke from experience. Black Angus cattle grazed contentedly on lush, belly-deep Coastal Bermuda pastures, sparkling lakes surrounded by stately pines dotted the landscape. Everywhere you looked, you saw effective soil and water conservation at work, a sign of good farming.

The personable Mr. Hicks, a small-scale operator by many of today's standards, has transformed his acreage into one of the finest grass-cattle operations of its type in the country and in doing so has established new highs in conservation farming. As a local soil conservationist points out "you can travel a thousand miles in any direction and not see a farm of this size with the quality and quantity of forage."

Fairview farms has not gone unnoticed. Hicks has, in fact, been cited many times for his progressive agricultural practices. The most recent honor accorded him was this year when he was named the outstanding conservation farmer in Texas.

The Carl Hicks story is a simple one. He took one of the most depleted pieces of land that you could find just about anywhere, land which had been mercilessly tenant farmed for 14 years, land from which the fertility had been depleted, land eroded, unfenced and almost without cover or water, and in 15 years turned it into an agricultural showcase.

The first move by Hicks in working his conservation miracle was to sign a working agreement in 1945 with the San Jacinto Soil Conservation District. After carefully studying all of the problems involved, it was concluded that the soil should be used differently.

Reprinted by permission from Humble Farm Family, P.O. Box 2180, Houston 1, Texas

Instead of row crop farming, Hicks and the soil conservation specialists agreed, the land should produce grass and high quality beef.

But first the erosion had to be stopped and a cover of grass laid down to protect the soil. Hicks built several diversion terraces to control runoff water, to divert water back onto the farm where it could be utilized and stored. He planted permanent pastures of Bermuda grass to increase water absorption into the land itself. Hicks also initiated a soil feeding program based on soil tests. It consisted, initially, of the application of about 1.5 to 2 tons of lime and 1,500 pounds of rock phosphate per acre on the sandy land.

Murphy, Idaho, the nation's smallest county seat, has a population of 31.

The following year—1946—Hicks started looking around for cattle to pasture on the grass that already was beginning to green up. After some hard figuring, he decided on the Angus breed and purchased five head.

As the grass and cattle operations grew, the Texas farmer began the construction of a series of lakes to more effectively control water runoff. Last year he completed the last of four of these reservoirs, each supplementing the other. One of the lakes covers six acres, is 16 feet deep, and the fishing is good.

"The years of drouth convinced me of the value of these lakes," Hicks points out. "Of course, I have to leave as much water on the land as possible. But if it is going to run off I want to store it in my lakes."

In 1955 Hicks pioneered the planting of Coastal Bermuda grass in his area. From an original one-fourth acre plot, he has replanted until he now has 70 acres of the grass. He hopes eventually to cover all of his permanent pastures with it.

He is very high on Coastal Bermuda and believes that it is head and shoulders above anything he has ever used. From a hay meadow of only 7½ acres this past season, Hicks got 3,028 bales in four cuttings.

At the present time he has 20 acres in temporary pastures, 70 in Coastal Bermuda, and the balance in common Bermuda, Dallis grass, and legumes. These acres produce all of the forage required for his fine Angus cattle.

He fertilizes his pastures at least twice annually, using as much as 1,500 pounds of fertilizer per acre on a field of Coastal Bermuda. This is, of course, far above the average for East Texas,

but when you can get 40 bales of air dry hay per acre and can sell it for 75c a bale, Hicks figures the extra fertilizer cost is well worth it.

Planting and fertilizing is not the entire picture. Hicks also realizes that pastures must be properly used. By proper stocking, he always leaves some dead grass to return to the soil. As a pasture is grazed down, he pulls the cattle off and rotates them. When you first see Hick's pastures, you probably will be convinced that he is under-stocked. Actually, he runs an average of one animal unit per 2½ acres.

His policy is to stock for poor conditions. "I try to maintain a number of cattle that will fit the low periods. Then during the good years, I let the pastures go back to organic matter," he says.

Half of the world's population still earn less than $100 per year.

Through conservation planning, his 17-acre woodland section has been moulded into a productive unit of the farm and provides continuous protection for the soil and wildlife. His woodland produces poles, sawlogs, and posts. Only the culls and tops are sold for pulpwood.

Hick's conservation work through the years has paid off handsomely. His pastures now carry 90 head of registered cattle, including 40 mother cows and 20 bulls. He sells his cattle strictly as breeding stock and the excellence of his animals is widely accepted. He still is a great believer in the Angus breed, and currently is serving as president of the Gulf Coast Angus Association.

His cattle fatten quickly on grass, hay, and oats and vetch silage. He plans to alter his silage program soon, however, switching entirely to Coastal Bermuda.

To extend the grazing period on warm season permanent pastures, Hicks plants cool season legumes such as Crimson and White Dutch clover. He also has one pasture of Alyce clover for additional grazing during the summer months.

Hardly a day passes that visitors do no drop by to admire some phase of Hick's conservation program or some of his fine cattle. These lookers include local district cooperators, high school FFA boys, and college students. A group from Java once dropped by to gather ideas to take back to their homeland. An ambassador from Pakistan was there just to look and learn.

One of the most remarkable aspects of Fairview Farms is that Hicks himself has done most of

the work. His neighbors say he works six days a week, planting grass, and putting up fences. Then on Sundays he comes out just to look around. One day some visitors who stopped to admire the farm asked the unpretentious Hicks, "Do you take care of this man's cattle for him?"

Hick's neighbors have high praise for what he has accomplished through the years.

"I don't know who has helped who the most," says Luther Hall, secretary of the San Jacinto Soil Conservation District.

An adequate rural water system should supply a minimum of 50 gallons of water per day per person with additional allowances for livestock. Most people find that they use even more than this.

D. C. Lentz and Cleo Dark, Soil Conservation Service employees who advised Hicks through his soil building program, describe him as a perfectionist. "He is well informed on what to do," says Dark, "and he does it thoroughly."

Carl Hicks is not through with his work at Fairview Farms. He is still sprigging in more grass, still putting up new fences, studying better drainage patterns, and thinning the woodlands. His work with the land probably will never be finished, he believes.

"I'm trying to help preserve the institution of the small family-sized farm through good conservation. And you know it's an institution that is disappearing fast," he says.

But with men like Hicks at work, the efficient, family-sized farm undoubtedly will be with us for many years to come.

Clip Baby Pig Teeth

Swine producers differ in their opinions about the value of clipping needle teeth of baby pigs.

This practice is more likely to be advisable in the case of big litters where there could be more fighting for a place at the udder which is more apt to result in facial cuts which provide an opportunity for infection. In clipping needle teeth, it is important that the teeth be clipped off in such a manner that no ragged edges are left and the small pigs jaws are not crushed which would result in more harm than good. Special tools for this purpose should be used.

Rhinotracheitis Generally Strikes Hardest In Fall and Winter

Not a sign of "good cheer" in cattle herds. Quarantine replacement cattle to stop the spread of this direct-contact disease commonly called rednose . . .

Condensed from
Prairie Farmer

A CATTLE problem known in this country for only 10 years is already taking a sizable slice out of farm profits.

It now seems to be reaching out into new areas to such an extent that authorities are urging cattle owners to maintain a special alert for it this year.

The disease has the long-handled name of "infectious bovine rhinotracheitis" or rednose. Many cattlemen already know about it firsthand and have sustained substantial losses. To others, it is still new, and they need to watch for it.

This disease usually strikes the hardest in fall and winter. Rhinotracheitis attacks both beef and dairy cattle. Dairymen should suspect it when there is a sudden halt in milk flow. First symptoms in beef cattle include drooling, nasal discharge, or extreme excitement. Cattle may develop a deep cough and lose appetite.

As the disease progresses, the sick cattle begin to show difficulty in breathing. They also begin to lose weight rapidly.

How fast this problem can move in on an area is shown by its history in this country. The American Foundation for Animal Health says it was first discovered in feedlots of just one state in 1950. A few years later it had jumped to the west coast. Today, it exists in nearly two-thirds of the United States, and is fanning out further each year.

Fortunately, there are two favorable things about today's rhinotracheitis situation. The disease can be prevented by vaccination. Also, it can be treated successfully if medication is started soon enough.

The veterinarian enters this picture in both cases. The foundation says that vaccinating

Reprinted by permission from Prairie Farmer, 1230 Washington Boulevard, Chicago 7, Illinois

should be done by a veterinarian. Also, treatment procedures should be set up by the veterinarian after considering the severity of the outbreak and local conditions.

Spread by Direct Contact

An important thing for the owner to remember is the fact that this disease is spread by direct contact between animals and is highly infectious. Because of this, the first step is to move healthy animals away from sick ones. Then watch the healthy ones for signs of any more coming down with the disease.

There are also several complicating factors which the farmer needs to know. For one thing, rhinotracheitis may sometimes be mistaken for several other cattle diseases. That is why an expert diagnosis is usually important. Other diseases which resemble it are shipping fever, virus diarrhea, mucosal disease, and calf diphtheria. Sometimes, secondary factors also complicate the problem. Broncho-pneumonia, for example, has been known to follow rhinotracheitis.

Rhinotracheitis, like other contact diseases, is often brought into the home herd by replacement cattle. For this reason, many authorities say it is a good idea to quarantine replacement animals for a period of time before they are allowed to mingle with the rest of the herd. These new animals should be watched for signs of disease, and if an outbreak starts, prompt action can help to stop it.

Tranquilizing Drugs in Dairy Herds

It appears that the use of tranquilizing drugs in dairy herds may be limited to injections for quieting excitable animals.

Researchers report recent tests with three different tranquilizers—chlorpromazine, perphenazine, and tetrahydrozoline. The tranquilizers were injected into normal cows to determine the effect on milk let-down.

Although there were differences in the individual tranquilizers, all of them tended to interfere to some extent with milk let-down, as indicated by increased amounts of milk obtained with injections of the milk let-down hormone, oxytocin, after milking.

A group of Holstein heifers was fed chlorpromazine for a seven month period with no observed beneficial effect. The heifers had normal heat periods and conception rates. Feed consumption and weight gains were normal, except for a lowered rate of gain during hot weather. —*Chicago Farmers Bulletin*

Catarrhal Fever Can Cause Trouble

Not much is known about it yet . . .

Condensed from
Western Farm Life

MALIGNANT catarrhal fever is a very peculiar disease, not contageous, yet epidemics have shown up in cattle herds.

Not very much is really known about it, but it can result in the loss of a good deal of money if allowed to spread.

Malignant catarrhal fever of cattle is also sometimes called head catarrh. It is primarily a disease affecting the red blood cells and was first reported from Pennsylvania in 1918. Since that time it has been recognized in most of the other states.

Although not usually considered as a contagious disease, severe epidemics of catarrhal fever may occur. The means of spread is unknown, but the causative virus seems to be air-borne in at least some outbreaks, with the lungs being affected first.

Experimental work has shown that the disease may be spread by sheep, for it has been transmitted from cattle to sheep and from sheep back to cattle. However, sheep are not generally considered as dangerous carriers of catarrhal fever. The theory that blood sucking insects spread the disease isn't always supported, for outbreaks often occur during cold seasons when there are no flies or mosquitoes.

The first symptom noticed is usually a sudden sickness that is accompanied by a high fever that may reach 108 degrees. Animals stop eating, lose weight rapidly, and milk production drops off to almost nothing. The head is often held straight out because of a sore throat that causes a noticeable slowness in eating and drinking, and the upper part of the throat may be swollen.

There is likely to be swelling and watering of the eyes, and there often is a reddish or yellowish discharge from the nostrils. Within a day or two after the first signs of sickness, a white film usually forms over the eyeballs, and various types of "crazy" symptoms may be shown. These range all the way from trembling and jerking to convulsions and attacks on

Reprinted by permission from Western Farm Life, P.O. Box 299, Denver 1, Colorado

people.

In the early stages the muzzle has a fiery red color, but it is soon covered with an ugly yellowish scab which is characteristic of this disease. In the late stages animals usually show evidence of a diarrhea, and there may be considerable rotting of tissues in the mouth. Animals weaken rapidly, often become lame, and the nostrils generally become clogged with a thick gray discharge which may be tinged with blood.

In most cases only a single animal is affected, and it may die in a few days with no evidence of contagion. At other times a single case will grow into an epidemic, with sick animals either dying suddenly or lingering along for several weeks before death. There are a few recoveries, but most affected cattle can be expected to die.

Antibiotics and pesticides are considered adulterants in milk. Dairymen should take extra precautions against permitting contamination of milk for sale as these materials present a serious public health problem.

A diagnosis is usually made on the basis of the symptoms already described, the involvement of only a few animals, and the large percentage of deaths. Under farm conditions, owners might easily confuse this trouble with others like shipping fever, poisoning and ailments of the so-called "mucosal disease complex." These troubles can be told apart to some extent if the following differences are considered:

Shipping fever—No "crazy" symptoms, and showing more evidence of pneumonia without muzzle lesions.

Poisoning—No typical nasal lesions and discharges, and no involvement of the eyes.

Red nose or IBR—More sick animals, but with very few deaths.

Virus diarrhea—Lesions confined to the digestive organs, with no "crazy" symptoms or involvement of the eyes and muzzle.

Mucosal disease—No "crazy" symptoms or eye involvement, although only a few animals are affected and all of them die.

When animals are showing these "crazy" symptoms, it is usually best to do nothing to excite them, although the new tranquilizing drugs may be used to quiet them. Whenever possible, sulfas can be given in combination with glucose and vitamin A. Regardless of what is done for sick animals, the chances of recovery are extremely poor when cattle are affected with catarrhal fever. Since the means of spread is unknow, no preventive measure can be given at this time.

ONE YEAR CONTINUING INDEX

BEEF CATTLE

Size and Productivity .....Jan. 1960
Cull Beef Now or Pay Later .....Jan. 1960
Fattens on Home-Made Pellets ....Jan. 1960
Steer for Right Grade .....March 1960
Right Feeding Program .....March 1960
Milk Production of Beef Cow ....March 1960
Your Bull's Kinsey Report .....April 1960
Cattlemen, Registered Beef Breeders May 1960
Growing, Finishing Beef .....May 1960
Beef Boosters Are Important .....May 1960
Care of Calves .....July 1960
Use of Feed Additives .....July 1960
Beef Type Steer Coming .....July 1960
How To Feed Cornbelt Cattle .....Sept. 1960
New Way Grow Beef .....Sept. 1960
Hybrid Vigor, Fact or Fiction .....Sept. 1960
Performance Records, How To Use .Sept. 1960
Modernize Feeding .....Oct. 1960
Planning the Feedlot .....Oct. 1960
Beef Performance Testing .....Nov. 1960

CONSERVATION AND TREE FARMING

53 Acre, One Man Forest .....May 1960
Steps To Profit With Timber .....May 1960
Is Water Weakest Link? .....July 1960
Preserve Organic Matter .....Sept. 1960
Good Land Forming .....Nov. 1960
Getting Most From Grassland .....Nov. 1960

CROPS

Phosphorus — Key to Good Seed ..Jan. 1960
What Causes Corn Stalk Breakage ..Jan. 1960
Six Ways Boost Soybean Yields ...Feb. 1960
New Varieties For You .....Feb. 1960
Sweet Clover Rebirth .....March 1960
Get Hep to Seed Terms .....March 1960
Kansan Tries Wheel-Track .....April 1960
Corn For Combine .....April 1960
Low Population Limits Yields .....April 1960
Don't Leave Wages in Corn Field ..April 1960
Plant Corn Solid for Green Feed ..April 1960
Hull-Less Oats, Pros and Cons ....April 1960
Will You Plant Oriented Corn? ....April 1960
How Much Water for Corn .....April 1960
Check Corn Yields in Field .....April 1960
Don't Forget That 4th Ear .....April 1960
Plow Planting Corn .....April 1960
Don't Risk Poor Corn Yield .....April 1960
Are Your Corn Yields High Enough? April 1960
Stubble Trouble .....May 1960
Report on Dwarf Corn .....May 1960
Hidden Hunger in Crops .....May 1960
Oats: Grain or Silage? .....July 1960
When To Irrigate? .....July 1960
Good Plowing is Good Business ...Sept. 1960
Plant Breeding New Directions ....Oct. 1960

DAIRY CATTLE

Feed Heifers for Growth .....Jan. 1960
Goldings Test SNF .....Jan. 1960
Loose Housing for Dairy Cattle ....Feb. 1960
Feed Heifers to Breed Earlier .....Feb. 1960
Reduce Herd Turnover .....Feb. 1960
Problem Antibiotics in Milk .....Feb. 1960
Can You Afford A Bull? .....Feb. 1960
Steps To Cleaner Milking Machines .Feb. 1960
Pasture Rearing Bucket Fed Calves March 1960
Plan Calf Pens .....March 1960
Herringbone Stalls Speed Milking .March 1960
Herds Get Larger, So Do Problems March 1960
Why Cows Leave Home .....April 1960
Do Calves Cost Too Much .....May 1960
Treating Posts To Last .....May 1960
10 Points for Dairy Profits .....July 1960
Supplemental Feeding .....July 1960
Foundation Cows .....July 1960
Dairy Industry, Changing World ..Sept. 1960
How Many Cows? .....Sept. 1960
Canned Milk, Future .....Sept. 1960
We Like Dairying Now .....Oct. 1960
Feeding Cows by Electricity .....Oct. 1960
Automation on Dairy Farm .....Oct. 1960
Make Friends, Influence Cows ....Nov. 1960
Conventional vs. Cow Factories ....Nov. 1960

FARM BUILDINGS & SHOP WORK

Getting Best From Concrete .....March 1960
Planning a New Silo .....April 1960
Aerate Stored Grain .....April 1960
Plastic Pipe, How To Use It .....Sept. 1960
Silos Wear Coats, Too .....Sept. 1960
Liquid Manure System .....Sept. 1960
Buildings Earn Way .....Sept. 1960
"If I had the Plans" .....Oct. 1960
Paving A Barnyard .....Oct. 1960
Buy Good Drain Tile .....Nov. 1960

FARM MANAGEMENT

How Low Are Farm Prices .....Jan. 1960
Start Your Son As Partner .....Jan. 1960
The Big Farm .....Jan. 1960
Chances Make Money in 1960 ....Jan. 1960
Can Population Catch Food Supply Feb. 1960
Who'll Gain From More Livestock? .Feb. 1960
Should You Rent or Own a Farm ..Feb. 1960
Agricultural Public Relations .....Feb. 1960
10 Ways to Lose on Livestock ...March 1960
We Can Reduce The Surplus .....March 1960
Check Corn Yields in Field .....April 1960
Corn Vs. Meadows? .....May 1960
Full Story About Subsidies .....May 1960
Changing Livestock Farmer .....July 1960
What's Your Son Going To Do .....July 1960
How Much Pay For Land .....Sept. 1960
Whose Feet in Trough .....Sept. 1960
Handle Livestock With Care .....Sept. 1960
Time Saving Machines Pay .....Oct. 1960
When Profitable to Mechanize .....Oct. 1960
Manure Lagoons .....Oct. 1960
Why Automate? .....Oct. 1960
Principles of Push Button Farming ..Oct. 1960
Human Engineering .....Oct. 1960
Don't Do Hard Way .....Oct. 1960
ABC of Chore Power .....Oct. 1960
These, Too, Are Farm Tools .....Oct. 1960
Farming in 1970 .....Nov. 1960
How You Stack Up On Profits .....Nov. 1960
Farm Operating Budget .....Nov. 1960
Corporation Farming? .....Nov. 1960
Is Promotion The Answer .....Nov. 1960
Carry Enough Insurance? .....Nov. 1960
Cut Costs That Cut Profits .....Nov. 1960
Destroy Farm Surpluses? .....Nov. 1960

FARM EQUIPMENT & MACHINERY

Importance of Horsepower .....Jan. 1960
What Machinery Really Costs .....Jan. 1960
Life from Your Old Battery .....Feb. 1960
Coming — Hay Wafer Machines ...Feb. 1960
Aerate Stored Grain .....April 1960
Four-Wheel Drive Tractors .....May 1960
Flail Type Field Chopper .....July 1960
Managing Farm Machinery .....July 1960

ONE YEAR CONTINUING INDEX

Thinking About Bigger Tractor .....Oct. 1960
Manure Lagoons .....Oct. 1960
Infra-Red: Hot News .....Oct. 1960
Automation Systems .....Oct. 1960
Modern Beef Equipment .....Oct. 1960
Farm Environment Electric Motors ..Oct. 1960
Plan A Water System .....Nov. 1960
LP Gas, How To Handle .....Nov. 1960

FEEDS
Rumen Revolution .....Feb. 1960
Minerals in Ration .....March 1960
Corn Alone, Expensive Ration ....April 1960
Feed High Moisture Corn .....April 1960
Use of Feed Additives .....July 1960
Shall I Go Bulk .....Oct. 1960
Figure Winter Feed Needs .....Nov. 1960
Fowl Manure, Cattle Feed .....Nov. 1960
Ditch Old Feeding Ratios .....Nov. 1960

FERTILIZERS
Manure Worth $500 .....Feb. 1960
Does Fertilizer Harm Soil? .....Feb. 1960
Fertilize, Analyze, Better Forage .March 1960
Plant Food Corn Absorbs .....April 1960
Fertilize For Efficient Crops .....April 1960
Right Place for Starter Fertilizer ..April 1960
Hidden Hunger in Crops .....May 1960

HAY AND HAY CROPS
Coming — Hay Wafer Machines ...Feb. 1960
Inoculation Costs Little, Pays Lot .March 1960
Plant Corn Solid for Green Feed ..April 1960
New Haying Methods .....May 1960
Why Condition Hay .....July 1960
Getting Most From Grassland .....Nov. 1960

HOGS
Think Twice About Hogs in 1960 ..Jan. 1960
Managing Brood Sow and Litter ...Jan. 1960
Drylot Hog Feeding Expands .....Jan. 1960
Start Right With Pigs .....Feb. 1960
Artificial Insemination, Swine .....Feb. 1960
How to Take Backfat Measurement March 1960
Baby Pig Diseases .....March 1960
Comparing Swine Breeds .....March 1960
Disease-Free Hogs .....March 1960
Repeat Breeder Sows Expensive ..April 1960
What's Ahead in Hogs .....May 1960
Feeding Hogs .....July 1960
Cool Hogs, More Profits .....July 1960
Roughage For Sows, Gilts .....Sept. 1960
What Do Pigs Inherit .....Sept. 1960
Keep Hogs Cool .....Sept. 1960
Farmer Designed Automation .....Oct. 1960
Take Carry Out of Hog Feeding ....Oct. 1960
Management Adult Boars .....Nov. 1960
Most Profitable Hog System .....Nov. 1960

INSECTS AND INSECTICIDES
Systemics for Plants, Animals .....Jan. 1960
The "Face" Fly .....Feb. 1960
Corn Thieves in Soil .....April 1960
Corn Seed Treatments .....April 1960
Corn Insect Control Program .....April 1960
Nematode Trouble Increasing .....May 1960
Rust Alarms Protect Corn .....May 1960
Strides In Insecticides .....July 1960

PASTURES
Fertilize, Analyze, Better Forage .March 1960
Green Chopping, Rotational Grazing May 1960
Sudan Grass - Hot Weather Ins. ...May 1960
Getting Most From Grassland .....Nov. 1960

POULTRY
Common Sense about Feed Ad'tives Jan. 1960
14 Hours A Day Laying .....Feb. 1960
Spraying Keeps Eggs Fresh .....March 1960
Better Poultry Feed Efficiency .....April 1960
Pests Thrive in Sun .....July 1960
Best Time Start Broilers .....Sept. 1960
What's Ahead for Poultrymen ....Sept. 1960
Feed Automation — Turkeys .....Oct. 1960

SHEEP AND GOATS
How To Measure Wool Shrinkage ..Jan. 1960
100 Lb. Lambs 100 Days .....Jan. 1960
Ewe's First Milk .....Feb. 1960
Creep Feeding Lambs .....March 1960
Rotational Creep Grazing Lambs ..April 1960
Insecticides To Use .....May 1960
Sheep Foot Rot Control .....May 1960
Ewe Management .....July 1960
Change in Lamb Grades .....Sept. 1960
Low Cost Lambing Pens .....Oct. 1960
Care For Lambs .....Nov. 1960

FARM BUILDINGS AND SHOP WORK
How Corn Silage Measures Up ....Jan. 1960
Planning a New Silo .....April 1960
Make Good Corn Silage .....April 1960
Bruised vs. Coarse Forage Silage ..May 1960
Fall Silage Crops .....Sept. 1960
Make More Sense with Silage ....Sept. 1960
All Silage and Automatic .....Oct. 1960

SOILS
Does Fertilizer Harm Soil? .....Feb. 1960
Soil Testing, Real Private Eye ....April 1960
Deep Rooted Plants Open Soil ....April 1960
Compaction, No. 1 Problem .....July 1960
Soil Molds — Friend or Foe .....Oct. 1960
Good Land Forming .....Nov. 1960

VETERINARY
Systemics for Plants, Animals .....Jan. 1960
How To Use Vet Thermometer .....Jan. 1960
How To Clip Pig Teeth .....Feb. 1960
The "Face" Fly .....Feb. 1960
Take and Read Backfat .....March 1960
What Makes Animal Eat .....March 1960
Dehorn 'em When Young .....March 1960
Question of Antibiotics .....April 1960
Sheep Foot Rot Control .....May 1960
Will Vaccination Lick Mastitis? ....May 1960
Tips For Livestock Health .....July 1960
Cattle Lice — Spray Now .....Nov. 1960

WEEDS
New Granular Weed Killers .....March 1960
White Death for Canadian Thistle .May 1960
War On Weeds .....May 1960
Wettable Powder in Weed Sprayers .July 1960

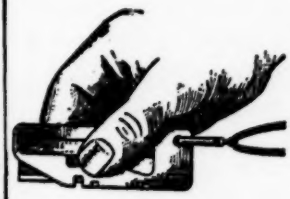
MISCELLANEOUS
Don't Blame Research .....Jan. 1960
How To Train Your Dog .....Feb. 1960
Farm Tour of Russia .....March 1960
15-Acre Farm in France .....April 1960
Remember Those Horse Stories .....May 1960
How To Select a Horse .....Sept. 1960
Shep, A Dog Story .....Sept. 1960
How Much Is A Bushel .....Nov. 1960
Love Of Land Built King Ranch ....Nov. 1960

FARMER'S DIGEST CUTTER-CLEANER-SCRAPER TOOL

Cleans spreader beaters. Scrapes plow and cultivator shovels. Cuts weeds and briars. Open bales. Cutlery steel head has knife-sharp cutting hook, broad scraping edge. 20" long. Hanger, hardwood handle. Order one from Farmer's Digest, Fort Atkinson, for each tractor. $1.69 each. Two for $3.00.

FARMER'S DIGEST PIG & CALF CASTRATING KIT

With New Castra-Knife, Illustrated Instructions, Lanyard, Extra Blades.



Do your own castrating and do it right. Half a litter or one calf pays for this kit. The new Castra-Knife is a sharp, handy, safe razor-blade cutter. Unlike old type castrators, it is always super sharp for a fast, sanitary, humane job. It is safer for you and the animal because blade sets to limit depth of cut, also retracts and is shielded when not in use.

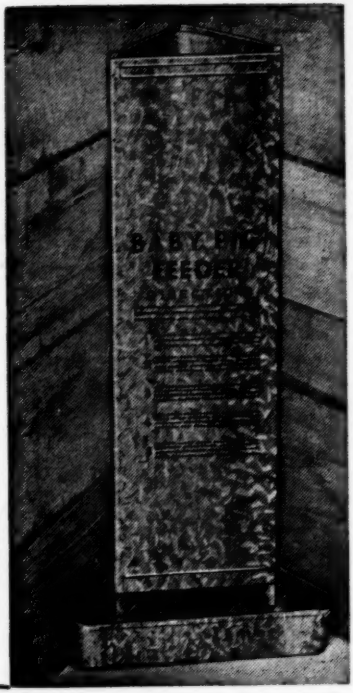
Authorities say illustrated instructions are best ever prepared covering old scrotal sac operation and new college-approved, simplified ventral incision method. Plastic lanyard cord with swivel suspends knife from clothing to free hands between operations. Saves time and avoids contamination. Kit also includes five extra blades and a plastic case. Order from this ad. Send only $1.29 to Farmer's Digest. Postpaid. Money back guarantee.

ORDER FROM — FARMER'S DIGEST, Fort Atkinson, Wis.

NEW FARMER'S DIGEST BABY PIG LITTER FEEDER

Start pigs on new creep feeds as early as possible to make money with hogs. This new feeder fits in corner of the pig creep near the heat lamp to start pigs eating as young as five days. Helps you get fast, low cost gains. Feeder front panel adjusts to allow a little or a lot of feed in pan. Saves feed, avoids waste. When litters run together four single feeders make one large feeder. Complete instructions.

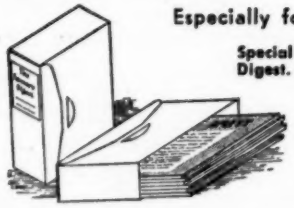
4 FEEDERS only $9.85 Postpaid



FARMER'S DIGEST FARM AND HOME FILES

8 Files, Only $2.95 Postpaid

Now, keep your farm business records filed neat and handy, right at your finger tips. Avoid losing expense records that save tax money. Keep machinery instruction books, crop and livestock records, etc. Made of white-lined cardboard covered with leather-like, forest green paper. Shipped folded flat. Look fine on your office or home bookshelves. Available with printed labels at right. Size 2" thick by 10" high by 7" deep. Specify files desired by number. Send check to address below.



Especially for Farmer's Digest —

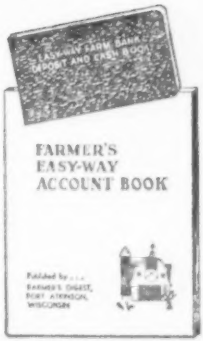
Special file holds one year of Farmer's Digest. Makes a 1000-page, completely indexed library of a one year subscription. Has advantages over binding that costs $4.00 per year. Order with other files listed at right or send 50c for one file, $1 for three.

FILES AVAILABLE
(Order by number)

1. Contents: (You fill in)
2. Agricultural Bulletins
3. Machinery Manuals
4. Swine Records
5. Crop and Field Records
6. Paid Bills and Receipts
7. Unpaid Bills, Receipts
8. Livestock Records
9. Cow Production Records
10. Farmer's Digest
11. Reader's Digest
12. National Geographic
13. Breeding Records
14. Soil Records
15. Poultry Records
16. Social Security Records
17. 4-H Records
18. F. F. A. Records
19. Veterinary Information
20. Government Programs
21. Cancelled Checks
22. Kitchen File
23. Comic Books

ORDER FROM — FARMER'S DIGEST, Fort Atkinson, Wis.

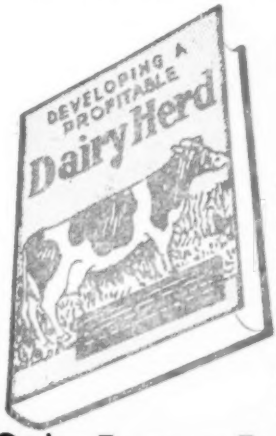
Farmer's Digest Farm Account System Lets Your Bank Keep Your Books



Saves time and taxes. Here's how it works: You deposit all farm income, using the handsome, cloth-bound Easy Way Deposit Book instead of your old bank book. Opposite the teller's entries, you jot down where money came from in ample space provided. To record expenses, pay everything possible by check and note cash spent in handy forms provided. Thus, at end of year, you have accurate substantiated records to summarize in the 48-page Easy-Way Account Book. Regular $1.95. Special Price $1.00.

New Corn Grower's Check Tape

This new idea helps you use latest approved practices to grow more corn. Does four jobs in a jiffy: (1) checks planter drop to make sure you plant enough seed, (2) counts stand per acre when corn comes up, (3) estimates yields before picking, (4) tells bushels your picker left in field. To read tape, just lay along row and count seed, plants or ears. For seed count, operate planter on hard lane. 108". Only $1.29 postpaid.



Book: "Developing A Profitable Dairy Herd"

Book tells whole story of how experts at Carnation Milk Farms built a record-breaking herd . . . revealing secrets every dairyman can use. Covers everything — buildings, breeding, diseases, feeds, feeding, management veterinary treatment. Brings practical help to overcome dairy problems. Well illustrated. Cloth. 224 pages. Regular price $3.50. Special price $1.75 postpaid.

Order From — Farmers' Digest, Fort Atkinson, Wis.

Send Farmer's Digest This Christmas

You can't send a wiser or more welcome gift than Farmer's Digest. It's something your friends, relatives, farm operators and customers don't have, something they want, something they are sure to like! See the special offer card enclosed. Mail your gift order now, pay in January.

New Easy Way to — "WEIGH" Beef Cattle

A new, low cost tape now makes it easy for you to accurately estimate the weight of your feeder and beef breeding cattle. For many purposes, it substitutes for a scale costing several hundred dollars. Tested on an experiment station beef herd, scale and tape weights differed less than 2% on total weight of 38 head. Use it to keep track of daily gain and thus check the effectiveness of your feeding program. Use it also to "weigh" fed cattle and market for the most profit. For cattle from 82 to 1888 pounds. One side estimates weight of fed cattle in grades Medium, Good, Choice and Fancy. Other side for feeder, beef breeding and crossbred cattle. To use, just place around heart girth, pull tight, and read correct scale. Side sewed 108" long, 1" wide. Extra strong, non-stretchable, plastic coated fabric in double thickness. Money back guarantee. Send check or M. O. to Farmer's Digest. $1.59 for One Tape, $4.49 for Three, $16.95 for Twelve. Low cost tapes available for premium use.

ORDER FROM — FARMER'S DIGEST, Fort Atkinson, Wis.